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**PROCEEDINGS
OF THE
AMERICAN ASSOCIATION OF MUSEUMS**

VOL. VII

1913

PROCEEDINGS
OF THE
AMERICAN ASSOCIATION OF MUSEUMS

**RECORDS OF THE EIGHTH ANNUAL MEETING
HELD IN PHILADELPHIA**

JUNE 3-5, 1913

CHARLESTON, S. C.

1913

FOUNDRY MUSEUM
1000 UNIVERSITY
ST. COLUMBIA
Sept. 16, 1927.

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PAUL M. REA, SECRETARY
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CHARLESTON, S. C.

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AMERICAN ASSOCIATION OF MUSEUMS

1913-1914

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PROCEEDINGS
OF THE
Eighth Annual Meeting
OF THE
American Association of Museums
HELD IN PHILADELPHIA
June 3 - 5, 1913

SESSION OF TUESDAY, JUNE 3

Morning

The opening session was called to order at ten o'clock by President Henry L. Ward, who announced that an official gavel had been presented to the Association by Mr. Thomas L. Austin of the Erie Public Museum, Erie, Pa. This gavel is an interesting historical relic, being made from a rib of Commodore Perry's flagship *Niagara*, and was presented by Mr. Austin immediately before the session began. The announcement of this gift was received with applause.

The Chair then introduced Dr. Edward J. Nolan, recording secretary of the Academy of Natural Sciences of Philadelphia, who delivered an address of welcome in behalf of the Academy and of the mayor of Philadelphia, who had expected to be present in person, but was detained by business engagements. Dr. Nolan referred to the last meeting of the Association in Philadelphia five years ago, when the Academy building was being remodeled and enlarged. He spoke of the founding of the Academy in 1812 and of the valuable collections of type specimens representing the work of Say, Wilson, Martin, Coker, Rider, and others and explained that enlarged appropriations from the state legislature now make it possible for the Academy to broaden and

extend its museum work beyond the technical fields which have chiefly occupied it in the past. Dr. Nolan extended a very hearty welcome to the Association, which was acknowledged in a response by the President.

The roll of attendance was then called by the Secretary. The following is a list of the members present:

ROLL OF ATTENDANCE

- Mr. W. B. Ashley, Demarest, N. J.
 Mr. Thomas L. Austin, Erie Public Museum, Erie, Pa.
 Miss Helen J. Baker, Metropolitan Museum of Art, New York City.
 Dr. Edwin Atlee Barber, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.
 Dr. S. A. Barrett, Public Museum of the City of Milwaukee, Milwaukee, Wis.
 Mr. Cheshire Lowton Boone, American Federation of Arts, Washington, D. C.
 Mr. James C. Boykin, Bureau of Education, Washington, D. C.
 Mr. Stewardson Brown, Academy of Natural Sciences, Philadelphia, Pa.
 Mr. William L. Bryant, Buffalo Academy of Natural Sciences, Buffalo, N. Y.
 Dr. A. R. Crook, Illinois State Museum, Springfield, Ill.
 Dr. Carlos E. Cummings, Buffalo Society of Natural Sciences, Buffalo, N. Y.
 Dr. George A. Dorsey, Field Museum of Natural History, Chicago, Ill.
 Mr. Richard Douglas, South Africa.
 Dr. C. H. Eigenmann, Carnegie Museum, Pittsburgh, Pa.
 Dr. Oliver C. Farrington, Field Museum of Natural History, Chicago, Ill.
 Mr. William L. Fisher, Philadelphia Museums, Philadelphia, Pa.
 Mr. Warren M. Foote, Philadelphia, Pa.
 Mr. William Henry Fox, Museums of the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
 Miss Anna Billings Gallup, Children's Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
 Mr. Benjamin Ives Gilman, Museum of Fine Arts, Boston, Mass.
 Dr. G. B. Gordon, University Museum, Philadelphia, Pa.
 Dr. M. J. Greenman, Wistar Institute of Anatomy, Philadelphia, Pa.
 Miss Delia I. Griffin, Fairbanks Museum of Natural Sciences, St. Johnsbury, Vt.
 Mr. M. R. Harrington, University Museum, Philadelphia, Pa.
 Mr. R. A. Holland, City Art Museum, St. Louis, Mo.
 Prof. Franklin W. Hooper, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
 Dr. Arthur Hollick, New York Botanical Garden, New York City.
 Mrs. Arthur Hollick, New York City.
 Mr. Henry R. Howland, Buffalo Society of Natural Sciences, Buffalo, N. Y.
 Mr. William J. Hyett, Carnegie Institute, Pittsburgh, Pa.
 Mr. L. W. Jenkins, Peabody Museum, Salem, Mass.
 Mrs. L. W. Jenkins, Salem, Mass.
 Mr. Charles W. Johnson, Boston Society of Natural History, Boston, Mass.

Mr. Henry W. Kent, Metropolitan Museum of Art, New York City.
Mr. Frederick L. Lewton, United States National Museum, Washington, D. C.
Mrs. Frederick L. Lewton, Washington, D. C.
Dr. Frederic A. Lucas, American Museum of Natural History, New York City.
Mrs. Frederic A. Lucas, New York City.
Dr. George Grant MacCurdy, Yale University Museum, New Haven, Conn.
Mr. Harold L. Madison, Park Museum, Providence, R. I.
Mrs. Harold L. Madison, Providence, R. I.
Miss Eva W. Magoon, Park Museum, Providence, R. I.
Mr. Levi W. Mengel, Reading Public Museum, Reading, Pa.
Prof. William C. Mills, Ohio State Archeological and Historical Society, Columbus, Ohio.
Mr. Roy W. Miner, American Museum of Natural History, New York City.
Mr. Edward L. Morris, Museum of the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
Mrs. Edward L. Morris, Brooklyn, N. Y.
Miss Florence V. Paull, Museum of Fine Arts, Boston, Mass.
Miss Clara N. Perine, Wistar Institute of Anatomy, Philadelphia, Pa.
Miss Agnes L. Pollard, Staten Island Association of Arts and Sciences, New Brighton, N. Y.
Mr. Charles Louis Pollard, Staten Island Association of Arts and Sciences, New Brighton, N. Y.
Mr. Edward K. Putnam, Davenport Academy of Sciences, Davenport, Iowa.
Miss Elizabeth D. Putnam, Davenport, Iowa.
Mr. Paul M. Rea, Charleston Museum, Charleston, S. C.
Mr. John G. Rothermel, Wagner Free Institute of Science, Philadelphia, Pa.
Mr. Louis Earle Rowe, Rhode Island School of Design, Providence, R. I.
Miss Rena Rowell, Charleston Museum, Charleston, S. C.
Mr. Julius F. Sachse, Museum of the Grand Lodge of F. and A. M., Philadelphia, Pa.
Mr. Herbert E. Sargent, Kent Scientific Museum, Grand Rapids, Mich.
Mr. Charles F. Silvester, Museum of Princeton University, Princeton, N. J.
Mr. Harlan I. Smith, Victoria Memorial Museum, Ottawa, Canada.
Mr. Douglas Stewart, Carnegie Museum, Pittsburgh, Pa.
Mr. Witmer Stone, Academy of Natural Sciences, Philadelphia, Pa.
Dr. James E. Talmage, Deseret Museum, Salt Lake City, Utah.
Mr. Charles R. Toothaker, The Philadelphia Museums, Philadelphia, Pa.
Dr. Charles H. Townsend, New York Aquarium, New York City.
Miss Lucie E. Wallace, Metropolitan Museum of Art, New York City.
Mr. Edward S. Ward, Ward's Natural Science Establishment, Rochester, N. Y.
Mr. Henry L. Ward, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mr. Frederic Allen Whiting, Cleveland Museum of Art, Cleveland, Ohio.
Dr. W. P. Wilson, The Philadelphia Museums, Philadelphia, Pa.

Secretary Paul M. Rea then presented the following report:

REPORT OF THE SECRETARY

Your Secretary has the honor to submit the following report for the year 1912-1913:

The *Proceedings* of the New York meeting were edited and printed during the summer but publication was delayed until December by the failure of authors to place their papers in the hands of the Secretary at the time of the meeting. For the meeting in 1913 all authors have been advised of the requirement that papers be submitted in form for publication at the time of the meeting. If this is done it should be possible to print the *Proceedings* during July and August and distribute them early in October.

The number of new members obtained during the year is smaller than usual. This is to be attributed in part to the fact that the Association now contains in its membership a larger proportion of the museum workers of the country and partly to the fact that the Secretary's office has been unable to devote as much time as in the previous year to attempts to secure new members.

The new members received during the last year are as follows:

NEW MEMBERS

Sustaining Members

Calgary Museum, Calgary, Alberta., Canada.
Museum of the Grand Lodge of F. and A. M. of Pennsylvania.

Active Members

Mr. W. B. Ashley, Demarest, N. J.
Mr. James C. Boykin, Editor, United States Bureau of Education, Washington, D. C.
Mr. Paul Brockett, Assistant Librarian, United States National Museum, Washington, D. C.
Mr. Warren M. Foote, Mineralogist, Philadelphia, Pa.
Mr. William Henry Fox, Curator-in-chief, Museums of the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.
Dr. Thomas M. Owen, Director, State Department of Archives and History, Montgomery, Ala.
Mr. W. deC. Ravenel, Administrative Assistant, United States National Museum, Washington, D. C.
Mr. Julius F. Sachse, Curator and Librarian, Museum of the Grand Lodge of F. and A. M., Philadelphia, Pa.
Mr. F. Hawley Ward, Ward's Natural Science, Rochester, N. Y.
Mr. Raymond Wyer, Director, Hackley Art Gallery, Muskegon, Mich.

Associate Members

Mr. Richard Douglas, South Africa.

Mr. M. R. Harrington, University Museum, Philadelphia, Pa.

The enforcement of the rule requiring the Secretary to withhold publications from members in arrears has resulted in the collection of \$170 through this office. There remain twenty-seven members in arrears for one or more years.

The publication of the *Proceedings* was followed by a circular letter referring to the offer of Dr. W. P. Wilson to prepare a circulating exhibit to be loaned to such museums as desire it. Less than half a dozen museums expressed interest in the plan. The data were forwarded to Dr. Wilson for such action as he might deem advisable.

If the Association is to extend its work into new lines and thus increase its services to museums and museum workers it is necessary that a further increase of income be obtained. Since its foundation the Association has been struggling to attain a basis of self-support. This was reached for the first time last year. A further increase in membership can only be obtained through the interest and active efforts of our present members in addition to the work of the Secretary's office.

The problem of organizing more active coöperation on the part of museums of art and history is still of extreme importance to our work. Your Secretary would strongly urge that the most serious consideration be given to this problem and that active steps for its solution be taken.

Respectfully submitted,

PAUL M. REA, *Secretary*.

The report of the Secretary was accepted and ordered incorporated in the *Proceedings*.

Treasurer W. P. Wilson then presented a summary of his report, showing a balance on hand of \$441.46. The full report was referred to an auditing committee consisting of Messrs. A. R. Crook, Charles W. Johnson, and James E. Talmage, which reported at a later session that the accounts had been examined and found correct.

The Chair announced a special meeting of the council and the delegates from art museums to be held at six o'clock in the evening for the purpose of considering the relation between art museums and the Association.

There being no further business to come before the Association, Prof. Franklin W. Hooper, director of the Brooklyn Institute of Arts and Sciences, presented the following paper:

INDUSTRIAL MUSEUMS FOR OUR CITIES

The consideration of the subject of industrial museums like that of other kinds of museums is chiefly an educational one. Our educational ideals and institutions have been undergoing a very great change and that change has not at any time been more rapid or far-reaching than at the present. To go no further back than the scholastic period in the middle ages, education was then chiefly for the clergy and for the royal and ruling families. The chief object of education in the scholastic period was the study of the classic writers of Greece and Rome; to find out what Aristotle taught, and to interpret philosophy, religion, and life in the terms of Aristotle and other classical writers. Printing was unknown. The classics and the Scriptures were copied, recopied, and memorized. Creeds were built up, catechisms were invented; the past was revered, and the future was feared. While we owe much to the greater philosophers and teachers of the scholastic time, we should not wish to revert to the education of the period when only a few were learned and the great mass of the people were ignorant and illiterate. The English universities were modeled on their continental predecessors and were broadened somewhat in their scope. But even with these, until within a few decades education has consisted almost exclusively in the study of language, literature, mathematics, history, and politics—an education drawn from books, rather than from experience, from the broad fields of natural and physical science, and from the study of contemporary human institutions and society.

Our American institutions of learning have been modeled on their English antecedents. Harvard, Yale, Columbia, Princeton, and our other older colleges continued in this country during the colonial period and until recently the so-called culture of the English universities. Our whole American system of public and private school education, secondary and primary, has been shaped and dominated by the colleges and universities that have sought to make the curriculum in our schools a preparation for the college and university, rather than a preparation for life. Education to generations of our American people meant, for the elementary schools, learning to read, write,

and cipher; meant, in our secondary schools, preparation for college wherein was a continuation of reading and writing, for the most part in Greek, Latin, and other foreign languages. By education was understood a study of books, the cultivation of memoriter processes—the study of words instead of the study of things, the reading of sentences instead of the observation of processes. Education was, to a large extent, artificial and not a matter of vital experience in doing and in thinking.

When we in the United States were chiefly an agricultural and rural people, the result of the education of the time was not so unfortunate as it would have been if carried on in a crowded city. The life of the boy or girl on the farm or in the village shop was a liberal education in itself superior to any substitute that could then be devised or has since been invented. In Emerson's "Mute Gospel of the Farm," we have an admirable description of that which is fundamental in education. The youth on the farm learned more of botany than the city-trained college professor of botany. He learned more of zoology and of that very recent science of eugenics; and there are no young people who are so near to the opportunity to secure the best possible education as those who are brought up on the farm in a good home with a school which simply supplements the education of the farm and of the home, and makes of the farm life and home life a laboratory and workshop connected with the school.

The city boy and young man is very much at a disadvantage. He cannot go to the store, the shop, the factory, or other place of occupation with his father. He is sent to school and is put through certain memoriter processes which are artificial and for the most part have very little proper relation to his life, present or future.

It is, to be sure, a very expensive kind of education that is given to the farmer boy and girl. It takes a large part of the time of father and mother, and of the older members of the family to provide the companionship and the instruction, but there is no expenditure of time and money that can be made which is more profitable.

We now speak of the cost of our city schools. They are indeed expensive, and considering the results they are extravagant. But our city schools are not as expensive as they should be and as they would be if the education given in them were a vital and practical one—a real experience in doing, in thinking, in preparation for work in after life.

Our schools need to be so revolutionized that each boy and girl

will have a real training—industrial, intellectual, and moral. The laboratory and shop work should be multiplied. Industrial and vocational schools should be open to every boy and girl. More of our high schools should be manual training schools, trade schools, and technical schools. The number of our private institutions, like Pratt Institute in Brooklyn, the Drexel Institute in Philadelphia, Armour Institute in Chicago, and the Carnegie Industrial Schools in Pittsburgh, should be increased. Trade schools should be attached to factories and shops and, in short, education in our cities should be made as natural and rational as it has been made for the youth on the farm.

In connection with the vast industrial education which is rapidly developing in our country and throughout the world, the industrial museum will have a very large place, supplementing, as it will, the industrial and vocational schools of every kind and character. Industrial museums will surpass in numbers, in the cost of their buildings and maintenance, all other museums put together, and they will be of a fundamental value to the cities in which they are created. These museums, moreover, will not only be of value to the boy and girl who is being trained for a life career, but will also be of service to every artisan and manufacturer and to every commercial enterprise.

The industrial museum is not a collection of machines, of products, of inventors' models that are of historic value only, but it is a place in which the best and latest machinery and the products and processes of manufacture are exhibited—a *museum in action*.

The best examples of industrial museums are, of course, to be found in Germany, France, Switzerland, and those countries where industrial and technical education is most thorough and complete, and where skilled labor is most common and most productive. The supreme position occupied by Germany, which has the largest number of industrial and technical schools and industrial museums in proportion to her population, is due chiefly to her conception of the function of education, and of the value of industrial museums in connection therewith.

Our world's fairs at Philadelphia, Chicago, St. Louis, Paris, and elsewhere have afforded admirable illustrations of temporary industrial museums and their educational and practical value. Those parts of these expositions which relate to the industrial, technical, and commercial interests of the world are always thronged with interested visitors.

The establishment of industrial museums in this country is already in its initial stage. The Commercial Museum in Philadelphia contains much that would find its place in an industrial museum. Collections like that of the Museum of Safety Devices in New York should form a part of every comprehensive industrial museum in a large city. In that great system of museums which will naturally be developed at our national capital already beginnings have been made of several technical museum collections in the old National Museum building. In our colleges and universities material is being collected to illustrate the sciences of chemistry, electricity, mining, and engineering.

There is no city in the country that needs an industrial museum more than does Greater New York. The value of her manufactured products in 1900 was approximately two billions, five hundred millions of dollars—equal to the value of the manufactured products of the ten next great manufacturing centers in the United States. The tables have not yet been compiled from the census of 1910, but the increase in the population of New York City during the decade 1900 to 1910 was equal to the increase in the population of the next four of our large and rapidly growing cities, and in all probability the value of the annual manufactured product in New York City is now greater than that of the next twelve of our large manufacturing centers. The number of residents in New York City engaged in manufacture requiring more or less skilled labor is approximately one million and a half and is rapidly increasing. The questions with which the city is therefore confronted are, as to what wages shall this manufacturing population earn and receive, and the more fundamental question as to what education shall be given to the rising generation that it may in its turn earn and receive a larger wage and become a more self-respecting, more independent, more intelligent citizenship.

The needs for industrial museums by other cities than New York are in proportion to their population and manufacturing industries.

There is no danger whatsoever that industrial education furnished to the youth of our city will make our people in the end more materialistic, loving money only. On the contrary a good material and industrial basis of life is necessary to the development of intellect and of character. Materialism is born of ignorance and selfishness, and of sin. Idealism is born of plain living, honest industry, simple relations between men and men. Our idealists are for the most part country born and not city born. They come from families of indus-

try. Of ninety-five of the better known sculptors of this country eighty-nine were born, were educated, and received the impetus to their profession in the country. Of three hundred of the better known painters in the history of American art 82 per cent came from families of humble circumstances residing either on the farm or in the hamlet. Our poets and men of letters who have given to our literature its national standing were of country origin. Our statesmen, justices of the Supreme Court, and presidents of the United States have, with but very few exceptions, begun life on the farm or in a home of modest frugality, and even our men of affairs, creators of great industries, great combinations of capital, presidents of corporations and of railway systems, have had their manual and industrial training in early life and by hard labor have worked their way from poverty and obscurity to places of power and responsibility.

We need to rely more on the simple and natural powers of the mind and the body, and less upon those artificial agencies, which in the past have been called education, for the development of character, of strong manhood and womanhood. It was the natural poet Longfellow, and not the college professor who translated the Divine Comedy. It was the author of *Thanatopsis* trained on the Berkshire Hills, who clothed in his own language the *Iliad* and the *Odyssey* of Homer. It was Abraham Lincoln, splitting rails and facing the elemental conditions of life on the prairies, who proclaimed that "this country cannot survive half slave and half free."

You, ladies and gentlemen, members of the American Association of Museums, understanding the educational value of the institutions which you administer and develop—you have it in your power more than any other men and women in the country to determine what shall be the educational value of museums in the future. In this gathering I see more who are connected with museums of natural history and ethnology than are connected with museums of art. In the future may the museums of art be equally represented with the museums of science and ethnology, and may we add to our numbers as the years go by many men and women connected with the industrial museums of our country, a few of which already have their beginnings, and many of which are destined to be established.

Mr. Roy W. Miner, assistant curator of invertebrate zoology in the American Museum of Natural History, New York, then presented a paper descriptive of the new ecological group showing animals of the wharf piles recently installed at the American Museum. Mr. Miner's paper was similar to the one which he presented at the New York meeting on "Marine Invertebrates in Museum Groups."¹ It was illustrated with very beautiful lantern slides, showing the progress of the year in installation of this character. In response to a question, Mr. Miner stated that the cost of the wharf pile group was between \$2400 and \$3000, approximately the same as that of the annulate group described in his previous paper.

Dr. Oliver C. Farrington, curator of geology in the Field Museum of Natural History, Chicago, then presented the following paper:

METEORITE COLLECTING AND COLLECTIONS

Since museums consist to a greater or less extent of collections, it may not be outside the province of this body to devote a little time now and then to the consideration of how collections are made. Meteorite collecting may be especially worthy of consideration in this way since it may easily be shown to be a measure of civilization. A map of the world on which are shown the localities at which meteorites are found, is almost exactly a map of the distribution of the Caucasian race; or, in other words, of the civilized peoples. There is no reason to suppose that meteorites do not fall among uncivilized peoples, but they preserve no records of them and have no museums for collections of them. Hence a map showing the location of meteorite falls would also serve in a general way for a map of the museums of the world; and the presence of museums is well known to be a mark of the highest culture.

There is no question that only a very small part of the meteorites that fall are ever collected or preserved. It can be shown in several ways that at least nine hundred meteorites reach the earth each year. About three-fourths of these are necessarily lost, since three-fourths of the earth's surface is covered with water; but the remaining one-fourth, or two hundred and twenty-five a year, should, theoretically, be found. This figure may be halved on account of the uninhabited portions of the earth, and halved again for meteorites falling in the

¹ *Proc. Am. Assoc. Mus.*, VI, 26-30.

night. It would seem, therefore, that about fifty meteorites might be found every year. In fact, however, only about two a year are found over the whole civilized world, and all the meteorite collecting in all the world to date has only yielded, both of those seen to fall and those found, about seven hundred distinct falls.

It might seem that the easiest way to collect meteorites would be to watch for passing meteors in the sky, and when one is seen follow it to the spot where it falls. As a matter of fact, however, very few meteorites have been found in this way. It would be remarkable if any was so found, but one was found recently in Kansas in exactly this manner. The party who was thus successful was, however, a surveyor, well acquainted with directions in his locality, and he searched for three years before finding the stone. If meteorites fell in the manner indicated in an oldtime engraving, i.e., in such quantity as to kill and strike down men and animals, their collection would be easy. Fortunately no authentic instance of destruction of human life in this manner is known. There are some fairly reliable accounts of animals being killed but not men. A meteorite which I obtained in Canada, fell so near a house as to splash mud on the window, and a change of two feet in its direction would have driven it through the window. In Braunau, Bohemia, a meteorite fell into a room where two children were sleeping. It covered them with débris but did no further damage.

Where meteoric showers occur, a certain amount of method can be adopted in collecting the stones, since they usually fall over an elongated area with the larger stones at the farther end of the meteor's course. The shower which fell at Homestead, Iowa, in 1875, spread several hundred stones over an area about seven miles long by three miles wide, and it is obvious that search over an area like this should yield quite a number of meteorite individuals. Not all localities, however, are as fruitful as this. An area in Kansas over which I searched in 1906, although it was about the same size as the Iowa area, seven miles long by three miles wide, yielded only about twenty stones. By searching over this area, however, I succeeded in finding the second largest stone of the number, although the territory had been looked over very carefully for months by the people of the region. Searchers in other localities have sometimes been less successful. At the locality of the shower of Blansko, Moravia, which fell in 1823, von Reichenbach employed thirty to one hundred and twenty men searching systematically for a week, but they found only seven small

stones weighing about a pound in all, or less than a gram a day per man.

Very slight evidence may sometimes give indications of the places for collecting meteorites. One of the largest and finest meteorites which has fallen in this country was found a few years ago in the midst of a dense woods in Kentucky because an experienced squirrel hunter saw, on a limb far above his head, a slight scar. He was sufficiently experienced to know that this meant a fall of something through the branches, and looking at the foot of the tree he found a one hundred and eighty pound meteorite.

Stone meteorites are rarely found by uninitiated searchers except in regions where stones are not to be expected, such as the great plains of Texas, Kansas, etc., where any foreign stone attracts attention from being a stone; but in a region supplied with natural rocks the detection of meteoric stones is difficult and unusual. Meteoric irons, on the other hand, attract the attention even of the ordinary observer by their weight and metallic nature. Hence, wherever found, whether on the surface or by plowing or digging, there are very few either civilized or uncivilized people whose attention is not attracted by them. The presence of meteorites in uncivilized countries has often been brought to the attention of civilized peoples by the use which the uncivilized people have made of the meteorites for metallic objects. In this way the large Greenland meteorite was discovered, and others.

As a rule, the testimony of individuals that they saw a meteorite fall and picked it up is very unreliable. Scarcely a week passes that some such specimen as this does not reach the museum, and the week equally passes leaving proof that the specimen was of terrestrial origin. In many such instances doubtless a meteorite falls, but the observers do not procure it. Fortunately the detection of meteorites does not rest upon the reliability of such evidence, since the characters of meteorites are sufficiently well known so that their nature is conclusive.

When meteorites attain considerable size, their collection and removal involves considerable labor, and the handling of these great masses is always a matter of difficulty. The greatest task of this kind which was ever accomplished was the removal of the great Greenland meteorite, weighing thirty-five tons, from Greenland to the American Museum of Natural History. This was accomplished in a spectacular but successful manner, by ship from Greenland and a team

of many horse power in New York City. The bringing of the Gibbs meteorite, weighing sixteen hundred pounds, from Texas to New York in 1810 was likewise attended with considerable difficulty. Two rival parties set out to secure the mass under the impression that it was platinum, and one of them succeeded only after many hardships and encounters with hostile Indians. It was brought on a specially constructed flat boat down the Red River and Mississippi to New Orleans and from there was shipped to New York. The Willamette meteorite, weighing about fifteen tons, was moved by a man and a boy and a small horse about three-quarters of a mile through a dense forest in the hope of thereby obtaining possession of it. This hope was not realized. The Bacubirito meteorite, weighing probably about thirty tons, is still in a remote corner of the mountains of north-western Mexico and still awaits "collection."

The preservation of meteorites in museums has been carried on for scarcely more than the past century. In fact, until the latter part of the eighteenth century the possibility of the fall of stones from the sky was scoffed at by scientific men, and we have records of meteorites being thrown away by directors of museums because they were ashamed to exhibit them. One wonders what material which may prove of value in the next century is now being thrown away through fear of ridicule. We know that such skepticism regarding meteorites was shared by many intelligent and able men, since President Thomas Jefferson, after reading an article by Professors Silliman and Kingsley on the fall of a meteorite in Connecticut, is said to have remarked that it was easier to believe that a couple of Yankee professors would lie than to suppose that stones would fall from heaven. Early in the beginning of the nineteenth century, however, faith in the fall of meteorites began to be established and collections were started by the leading European museums, especially those of Vienna, Paris, and London. These collections grew at first very slowly, and by the middle of the century had hardly reached more than fifty falls each. The period from 1860 to 1870 was marked by a large number of meteorite falls and greater interest in the subject began to be aroused. Hence meteorites began to be more rapidly collected. For many years the Vienna collection remained in the lead and it was only recently that it lost this lead. Little was done in our own country towards preserving meteorites, and many of our finest specimens went to Europe. Nevertheless, small collections grew up in Yale and Harvard colleges, and after the founding of the National Museum a large collection was

soon established there. By the close of the nineteenth century full appreciation of the importance of meteorites had been achieved and their preservation was assured by various collections in all large cities in Europe and this country. The World's Fair at Chicago served for bringing together a collection which numbered about two hundred falls, and this was added to as opportunity permitted, until, within the last year, the acquisition of the Ward-Coonley collection gave it the largest number of falls of any collection in the world. Mexico has been peculiarly favored in the possession of a great number of iron meteorites and these have for the most part been kept in that country by a law which forbids their exportation.

In the installation of meteorites little has been attempted beyond grouping them according to kinds or dates and exhibiting them in cases for convenient examination. Various types of cases are used. In the British Museum a sloping top case, in the base of which are shown casts, is employed; while in the Paris and Vienna museums flat or upright cases are used. Collections are made at the present time by obtaining as far as possible, pieces of the different kinds in order to represent as many falls as possible. This gives opportunity for comparison and study of all meteorites and has been the foundation upon which a large part of our knowledge of meteorites, and through them of earth and stars, has been built.

Mr. Charles F. Silvester, curator of zoology, Museum of Princeton University, presented the following paper:

A METHOD OF MOUNTING AQUATIC ANIMALS IN RELATION TO THEIR NATURAL ENVIRONMENT

The difficulty of properly displaying many of the more beautiful and delicate marine animals has led to the use of glass and wax in the artificial reproduction of these forms. The skill displayed by the modern glass blower in his endeavour to depict the forms and conditions of animal life has resulted in the construction of groups which are so finished in every detail that it would indeed be difficult in life to find such conditions. The expense connected with the construction of these animal groups in glass and wax, as well as the fact that many of the animals themselves, if properly preserved and mounted, are much more beautiful, has led to the presentation of this short note

and it is hoped that the method may prove as useful and valuable to others as it has to the writer.

The process consists simply in infiltrating with strong gelatine the sand or mud in which the animal has grown or lives, imbedding glass rods or pins in the mass before it sets and using this as a base upon which the animals to be exhibited are fastened or stuck. The ease and rapidity with which many of the beautiful coelenterates and sponges may be mounted make this method adaptable to the needs of the worker who has little time or money at his disposal.

We will describe the process of mounting a Sea Pen or Finger Coral which we will assume is too delicate to be taken out of fluid and which has been properly hardened and preserved.

First. A jar is selected which will allow ample room for displaying the specimen.

Second. Dirt, stones, sand, and gravel, or other substances associated with the animal's environment are placed in the bottom of the jar to the desired thickness and are then infiltrated with strong melted gelatine.

Third. A glass rod is selected and drawn out to the proper thickness and length in order that it may be inserted well up into the specimen after the base of the rod has been imbedded and set into the ground substance. It is usually better to try the specimen on the rod before setting it in position in order to make sure that the rod is strong enough and that it fits firmly so that the specimen will not turn or shake loose when it is finally placed in position. The portion of the rod below where the base of the specimen is to rest is melted and turned to several loops or angles which are pushed down into the gelatine-infiltrated ground substance. The gelatine is allowed to set with the rod sticking up in the direction in which the specimen is to project.

Fourth. The jar is placed in the fluid with the specimen, the specimen is floated into position and pushed down over the glass rod. The matrix should be hollowed out a little to fit the base of the specimen and to give the appearance of its having grown up from the ground substance.

If the jar in which the specimen is to be mounted is too small to allow placing the specimen in position with the hands or forceps, the matrix in which the glass rod is to be set will have to be hardened outside of the jar in a slightly larger box or receptacle. The sand or mud block is then trimmed down to fit the jar exactly, the specimen



FIG. 1



FIG. 2



FIG. 3

is placed in position on the glass rod and the whole thing is dropped or pushed into the jar.

Fifth. The cover is sealed on the jar and the back is painted with tube oil colors in such manner as to imitate the color of the water in which the animal lives.

Specimens which may be taken out of fluid for a few moments are much more easily mounted. This is true of most of the sponges and ascidians and many of the corals. Glass rods are driven into the bases of these animals, they are taken from the fluid, drained, and placed in position in the gelatinized mass in the bottom of the jar. The gelatine is allowed to set around the glass rod and the base of the animal, which it will do in about two minutes if a small amount of strong formalin is stirred into the mass just before placing the specimen in position.

The various possibilities of group making and of imitating the natural environment of the individuals under consideration are unlimited. Depth may be given to the background by spraying a pane of glass with a light coat of the color to be used and inserting this glass a short distance in front of the back of the jar. Sea weeds, grass, stones, and pilings may be partly imbedded and held in position by the gelatinous mass in the bottom of the jar. Many of the forms which lose their natural colors in the preserving agents may be painted without difficulty and if care is exercised these painted individuals often cannot be distinguished from the living specimen. The grasses and sea weeds used in group making should always be painted.

Aside from the sedentary forms, animals which live on the bottom of the sea or on the sandy shores may be beautifully displayed by this method of mounting.

An informal paper by Messrs. Witmer Stone and Stewardson Brown, curators in the Academy of Natural Sciences in Philadelphia, was then presented by Mr. Stone, under the title, "Use of Museum Resources in Public Instruction."

The Association adjourned at one o'clock for luncheon as guests of the Academy of Natural Sciences. The afternoon was spent visiting the Masonic Temple, Independence Hall, Carpenter's Hall, and the Historical Society of Pennsylvania.

SESSION OF TUESDAY, JUNE 3

Evening

The evening session was called to order by President Ward at the Academy of Natural Sciences at eight-fifteen o'clock.

Mr. Benjamin Ives Gilman, secretary of the Museum of Fine Arts, Boston, presented the following paper:

OBSERVATIONS IN EUROPEAN MUSEUMS

The American visitor to one of the older museums in Europe meets an atmosphere that has never existed in museums at home. The earliest museums sprang out of the collector's impulse—that of safe-keeping; those established after the World's Fair of 1851, out of the exhibitor's impulse—that of publicity. In 1840, the poet Southey justified bequeathing his collections for sale by the remark: "Put in a museum nobody sees them."¹ In 1912, the painter Detaille bequeathed his house and contents to the city of Paris to be made a museum.² In the interval, museums had developed from storehouses to expositions. To the duty of conserving what is worth seeing, they had added that of getting it well seen. They no longer serve only the few, able to see for themselves; they serve also the many, unable to see without aid. Even the older museums have of late exchanged their mainly passive attitude toward the public for a more active rôle.

Under the pressure of the double responsibility of keeping and showing, museums have come to magnify their office. Their growth and their new public importance have led them to treat their buildings and the installations within as independent works of art. This tendency the future must correct. A clear distinction exists between the purpose to exhibit works of art installed in a building and the purpose to make works of art of the building and the installations. The essential purpose of a museum is the first. A museum building may be a monument of architecture and its installations achievements of decorative art only in so far as both are compatible with exhibiting to the best advantage the objects so sheltered and arranged. It is the servitor of objective art as other public buildings are not,

¹ H. Crabb Robinson, *Diary*, III, 187.

² Press despatch, December, 1912.

and should express this difference of function in its design. Museums as expositions should become again the simple media for voices from the past which they once were as magazines; albeit with a care to be transparent media such as they never have been.

The present transitional stage is one of museum self-importance; the definitive stage one of self-forgetfulness. The future will surely approve of external and internal simplicity in a museum building. Age may mellow crudeness of surface and dignify plainness of line, but age will not restore to museum galleries light sacrificed to a façade; nor lessen the dis-harmony between decorations and contents different in spirit. The symmetrical architecture of one of the newest of European museums results in the same lighting and the same decorative forms in galleries of modern sculpture and of Egyptian antiquities. In two others, also built for their present purpose, the needs of the exterior have given the upper galleries windows reaching to the floor, but only partly to the ceiling, blinding the visitor and unnaturally lighting the objects. In the study of newer collections generally, obtrusive gallery decoration is something to fight against. The gratuitous burden of color and form in walls, floor, and ceiling has its share in the fatigue of a museum visit. By comparison, the reserve of an old palace like the Brera is an immense relief.

The future will surely approve also the arrangement of objects to enhance their individual effect instead of their collective effect. Museum acquisitions are commonly fragments, designed for other companion pieces than their chance associates in museum galleries. The attempt to combine them cleverly into a decorative scheme stands on the artistic level of an old-time crazy-quilt. The future belongs not to the panoramic but the anthologic conception of both museum arrangement and museum visiting. Each of the artistic fragments preserved in a museum gallery has its individual aim, and it is for the unveiling of these aims to the after-world as an anthology of art that they are permanently shown. Reviewing them panoramically by a passing glance soon surfeits; and as a form of recreation or improvement in no way warrants the expenditure now devoted to museum acquisitions and their display. The separate inspection of museum objects for the individual content of each does repay, and fully, for all that our museums cost to establish and maintain; but this anthologic visiting the panoramic arrangement defeats. Cases symmetrically placed but shadowing each other, exhibits pieced out with inferior examples or with reproductions, backgrounds varying from room to room without correspond-

ing enhancement of the contents, represent some of the costly ways in which even the newest museums maintain the panoramic ideal.

If not designed to keep up interest in a panorama of rooms, the perpetual variety of wall coloring, found in many newer museums, would appear uncalled for on any grounds. There is one tone of color, a light gray-brown or dull yellow-gray which both experience and reason approve for many if not most museum purposes. Professor Möbius has proposed it as a standard.³ A creamy gray is favorably noted in the report of the commission sent to Europe by the Museum of Fine Arts in Boston, as the color often given the walls of his interiors by Peter de Hooch.⁴ The choice of dull gray-brown for the walls of the Vestibule Room (I) of the National Gallery made that apartment to me the most agreeable in general tone among all those seen last summer. The fact that gold is the accepted frame for our pictures argues for the use of dull yellow-gray as a general background. For this tone of color may be regarded as derived from gold by such a darkening and dulling as would balance the greater extent of surface covered. A like general tone is illustrated in rough plaster or common burlaps and could on that account be adopted experimentally through a whole museum at less cost than any other. Both these materials possess also the fine structure or play of light and shade which makes the carving or graining of a frame a congenial setting for the intricacies of a work of art.

Once freed from the monumental ideal without and the panoramic ideal within, modern museums would become the servitors of their contents which they were founded to be; but they would still be far from efficient servitors. They would be media for voices from the past, but not transparent media without changes obviously necessary in their methods of lighting, of giving information about their exhibits, and of aiding the visitor in other ways.

A museum is a place for the use of the eyes. The word "visitor" derives from the visual powers, and their economy is a prime desider-

³ Karl Möbius: "Die Zweckmässige Einrichtung grosser Museen." *Deutsche Rundschau*, vol. 68, 1891, p. 356. "Dull gray-yellow has the advantage over a white background that it is not blinding, does not tire the eye by reflecting light too strongly. It differs from a red, bright yellow, green, blue, violet or black background in that it does not produce any colored after images, any train of complementary tints in the eye to disturb the pure and full perception of the exhibited objects."

⁴ Museum of Fine Arts, Boston, *Communications to the Trustees*, III, 1905, p. 54.

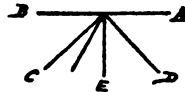
atum of museum methods. At present they are lavishly wasted. Light is often provided in right quantity, but generally also in wrong direction. Yet direction and not quantity of light is the chief element in good seeing. The eye is most sensitive to form and color under a moderate illumination only. Woods in the rain are full of gradations unnoted in sunshine. But if just dazzled by a burst of sun, the eye will not perceive them. The visitor to modern galleries is at frequent intervals dazzled by glares of light, now from the ceiling, now from windows, and now reflected from the surface of pictures or the glass of cases. Much of the illumination is directed upon himself instead of upon the objects. Could the resulting ocular anaesthesias be forestalled, his seeing powers would be greatly increased, one is inclined to say multiplied. In a measure glare can be provided against by curtaining the light-openings, by making ceiling lights narrower or higher, and by raising the sills of windows. Of the latter expedient it does not appear that adequate advantage has yet been taken. A window restricted to the upper third of the wall of a gallery of ordinary dimensions would not be directly in the visitor's eyes unless he looked toward it from the center of the room or beyond; nor be reflected into them excepting from the upper part of large pictures and cases against the opposite wall. Sculpture, pictures of moderate size, and works of minor art would be well lighted both on this and the window wall, where the milder light would still suffice for eyes undazzled by the window above. On the end walls of the room works of art of any kind or size would show to better advantage than in any part of a top-lighted gallery. The light would fall at an angle approaching forty-five degrees both with the perpendicular and with the line of vision of the spectator—the general direction called by Leonardo the best for all objects.⁵ Further, instead of the even mediocrity of

⁵ (1) Leonardo da Vinci, *Libro della Pittura*.

Cap. 85. In drawing from nature "the height of the light should be such that objects will cast shadows equal to their height." (45 degrees in elevation.)

Cap. 415. "Where should one stand to look at a picture?

Assuming that *AB* is the picture, the light coming from *D*; I say that a person placing himself between *C* and *E* will grasp it very badly, and especially if it is an oil painting or varnished to have some lustre like a mirror. It will be less visible on this account the nearer the eye approaches *C*, where the rays are reflected coming from the window. If a person places himself between *E* and *D*, he will see the picture well, and the better the nearer he is to *D*, because this position shares



illumination afforded by top light, the end, window, and opposite walls of a high side-lighted gallery would each have its individual lighting. Gradations of prominence in installation, which the contents of most galleries call for, would be possible. The interior porticoes of the Naples Museum, now walled up as galleries of sculpture, instance the agreeable and favorable effect of very high side lighting; but in most side-lighted galleries, new and old, the windows run well into the lower half of the wall and, unless curtained, leave the visitor no eyes for anything else.

Information about exhibits in museums is chiefly given in the form of inscriptions affixed to them, or labels. Two facts about museum labels indicate the limitations of their use. First, a placard affixed to a work of art, while it may be an aid to ignorance, may also be a hindrance to the enjoyment of the work by one who comes prepared. Second, the information given on labels is apt not to be germane to the artistic content of the object labelled. Some form of printed information is called for which shall neither stand in the way of the spectator when instructed, nor lead the thoughts of the uninstructed away from the work. The rigid subordination of labels and the exclusion therefrom of irrelevant information is an essential factor in training the visitor to study the objects themselves—the purpose for which a museum is established.

The problem of the form of labels offers no difficulty in the case of pictures and sculptures, where the frame and the pedestal offer appropriate places, at once connected and subordinate, for an inscription. In the National Gallery and elsewhere in England the names of artist and subject are painted along the frame below and immediately next the canvas, and upon occasion the source on the corresponding upper margin. It is particularly desirable that the names of givers or lenders should have, as by this practice, a separate place from the label proper. This both emphasizes such data and enables the visitor to ignore them if he choose. At the National Gallery one always knows where to look for both kinds of information, and neither is noticeable at the ordinary distance of seeing, although a step makes

less in reflected rays." (45 degrees or less with the line of vision of the spectator.)

Cap. 104. "On the quality of illumination." "A large volume of high light not too brilliant is that which renders the details of objects most pleasing."

the words legible. The pedestals of sculptures are open to labelling in a way equally orderly and no less inconspicuous and effective.

The real physical difficulties of labelling begin with the minor arts. It is in the first place admittedly impracticable in a collection of smaller things to give a label to every object needing one. The application of a separate inscription to every individual exhibit whose proper comprehension will be impossible to most people without special information is in many cases completely destructive of the effect of all as works of art.⁶ For the most part the attempt is abandoned in European museums, many of the richest exhibits of textiles, metalwork and woodwork containing only an occasional label. The problem, as at present conceived, must and evidently does present insuperable difficulties. It is time to attack it at some other angle. Commercial show windows enforce a similar lesson. The cheap and mean appearance of the shops on Regent Street, Bond Street, and Piccadilly compared with those on the Rue de la Paix or Fifth Avenue is due in great measure to the immoderate labelling of objects in London, not only with prices but with other information, and their scanty placarding in Paris and New York. The profusion of printed cards is convenient but also unmannerly. The shops of the chief dealers in works of art are a marked exception, and museums should heed this testimony of business experience combined with good taste.

In the second place, a label on any small object is necessarily either obtrusive or difficult to read. Common practice inclines to the latter fault, with the result that if the visitor to exhibits of minor art exerts himself to read labels, he is soon too fatigued in body and eyes to observe the objects adequately. After bending to decipher one, he stands erect and loses the other. My note-books of last summer often contain the remark: "Labels illegible."

The problem of composing appropriate labels is a difficult one for the major and minor arts alike. Printed information on objects which shall answer the uninformed spectator's chief questions without uselessly occupying his thoughts or forcing them into other than artistic channels is still in the main a desideratum of museum economy.

⁶ "In the Tokio Museum the little collection of *netsuke* consists principally, for the eye, of white labels which tell in two languages and under many prescribed heads very little and mostly the self-evident; while the miniature sculptures, often of the most fascinating kind, almost disappear in comparison." Curt Glaser. *Ostasiatische Kunstmuseen. Museumskunde*, viii, 3, 1912, p. 148.

As commonly composed for pictures, labels act perceptibly to lower the élan with which the eyes search the canvas for new conceptions and for points of attachment in memory, interposing a rush of abstract historical ideas and even indifferent registration data between the visitor's perception and the artist's intention. It is especially undesirable that they should be filled as they frequently are in Europe with self-evident information. To be halted in the inspection of a landscape to learn that it represents "Cottage with Covered Haystack by a River," "Forest Scene," "View over a Flat, Wooded Country" (one of many sequences noted) is to have one's vision remanded to nursery conditions. Again, in a collection of Eastern art the first half of the label, "Reliures Orientales XVI-XVIII Siècles" unnecessarily occupies the visitor's mind and eyes. The objects are patently book-bindings and the collection wholly oriental. In another collection an object is carefully labelled "Small Bronze Horse;" the facts that it is small, of bronze, and a horse being already plain. An important indirect advantage of a label is that it provides a name by which to call a work of art. This advantage is missed when the name is such as could be invented forthwith by anyone who remembered the object at all.

For objects of minor art there seems no alternative generally applicable, owing to the two physical difficulties just mentioned, other than to employ collective labels giving a general description of a whole class of exhibits. Such signs could be composed to answer the essential questions of visitors; and a legible number, which it is always possible to affix to any object however small, might refer to a list or catalog which should be duly advertised and made accessible. As matters now stand, the visitor looking through an exhibit of minor art for what may chance to interest him is often, perhaps generally, disappointed when he seeks a label on the object of his choice. Such collective signs, unobtrusively placed high on a wall or on the frame of a case, are not infrequent at present in European museums and were to me always welcome. But because their use is not made a system, they still betray the prevailing vice of labels—that of getting themselves forgotten and becoming out of date. In one important new gallery, immediately under the sign "Indian and Persian Cashmeres" the principal one of three objects was labelled "Mortlake Tapestry, England, 18th century." What was the uninstructed visitor to think?

A collective label applied to the contents of a whole gallery becomes

the designation of the room. Such gallery names are frequently found both on the Continent and in England, and one inclines to recommend their invariable use. They are often inscribed high on the wall, but for purposes of experiment might be painted on boards. If the design and lettering of such boards were carefully chosen and given a certain uniformity throughout a museum, they might become a permanent form of gallery sign, adapted to changing exhibitions as well. The upper part of a gallery wall is nearly always vacant, and offers for every form of exhibit a place analogous to that afforded for individual pictures and statues by the frame and pedestal. To such a position, connected and yet subordinate, printed information about museum objects should always be relegated. Placed high on a wall, the visitor already informed ignores it without effort, and the uninformed obtains it by only raising his eyes. This habit is quickly acquired when the device is found everywhere. The systematic use of high wall signs would, I believe, go far to solve the problem of labels in museum galleries.

Among other aids to visitors, plans of the building are distributed about several English museums. In some cases they outline the department, and are hung on the jambs of doors like the doorway plans adopted at the Museum of Fine Arts in Boston, but one misses the gold star which in our plans tells the visitor just where he is at the time.

The opportunity to sit down occasionally may be said to double the productiveness of a museum visit. Without it one is unable during the latter part of a visit extending over hours to give the proper attention to works of art, to say nothing of enjoying them, while, if time be taken for two or three short rests, the last hour may be as agreeable and profitable as the first. Seats should be used to forestall, not recover from fatigue, and should be so scattered as to make this possible everywhere in the museum. They are often provided abroad, and sometimes in greater number than necessary. Even in galleries full of visitors and containing comparatively few seats, some were always to be found vacant. The long gallery of the Louvre was the only exception noted. The elaborate upholstered divans frequently provided in Europe, beside being unattractive, offer an unnecessary amount of ease. Plain chairs or benches are more common, and care is often taken to give them the same color as the other woodwork of the room. Chairs are arranged in groups along the center of the gallery without apparently being much displaced. At the Brera they are of antique pattern in the form of a curving "X" and are very

pleasing in effect. Chairs of such a design would be a harmonious note in any gallery of European art. It is not necessary that gallery chairs should be light and portable. It is better that they should be too heavy to be displaced. In the Elgin Room at the British Museum, plain oak benches are in no discord with the marbles about, and for purposes of forestalling fatigue are ample.

To the tourist from the Museum of Fine Arts in Boston, the opportunity of personally meeting representatives of foreign galleries, like that offered by our docent service and conferences, is conspicuous by its absence. Within the past two years guides at stated times make the rounds of departments of the British Museum and, to judge by a similar service in Canterbury and other cathedrals, render a real and great service to visitors. At the Musée Guimet the conferences announced were without exception devoted to subjects and not to objects. Yet it is objects that visitors to museums come to see, and would be glad to hear about. Standing at the threshold of the immense treasury of the Louvre, and conscious of one's impotence to appropriate more than the merest crumbs of such a feast, nothing less than a perpetual series of conferences every hour and every day that the Museum was open seemed adequate to the requirements of its throngs of visitors. A corps of many men of culture and education would be needed, going far beyond the personnel of the Museum, and the larger the better. Instead of the works themselves, lantern reproductions and plaster casts might be used by the speakers for the purposes of comment in a lecture room, to be applied forthwith by the hearers to the originals in the galleries. In view of the start we have made in America at offering museum visitors the personal companionship of trained men, it seems not too much to anticipate that groups of scholars may before long be found everywhere combining in these ways to make the wealth of our museums the real property of contemporary society and a vital force in its life.

In the discussion following Mr. Gilman's paper, Dr. Frederic A. Lucas of the American Museum of Natural History expressed his feeling that there should be a difference in the installation of different kinds of pictures. Thus, paintings by the old masters, such as Raphael and Corregio should be installed in rooms of classical architecture, not too brilliantly lighted, and that pictures of the French school, such as those by Watteau, should be installed in more airy surroundings,

more fully lighted and with somewhat lighter backgrounds, while medieval sculptures would appear to best advantage in a room of Gothic architecture and somewhat somber in general appearance. He felt that the mode of installation should suggest as far as possible the conditions which give rise to the picture and under which it was intended to be seen.

Mr. Roy W. Miner of the American Museum of Natural History stated that, as a scientific man with no special acquaintance with art, he might represent the point of view of a large part of the public which visits museums of art. He said that his chief desire in visiting an art museum was to know the point of view of experts with regard to the exhibits, and that to obtain this requires information which he thinks can best be furnished by a small label attached to the picture or the object. Without such information the art museum must appeal to artists alone and the general public must fail to obtain a proper understanding of the artistic point of view. He recognized that the label might be a disturbing influence to the mind of the artist skilled in interpreting the technique of other artists.

Mr. Gilman replied that in the large west court of the Boston Museum devoted to casts of renaissance sculpture, typewritten pamphlets containing a description of the objects in the collection are kept on a table at the door. The objects are numbered to correspond with numbers in the books. There is also a brief label under every object, painted in a faint color to make it as unobtrusive as possible. The gallery books referred to and the general problem of labeling art objects have been described fully by Mr. Gilman in an earlier paper presented before the Association.¹

Mr. Herbert E. Sargent of the Kent Scientific Museum at Grand Rapids, Mich., agreed with Mr. Miner that visitors who are not artists require information in order to enjoy and appreciate the exhibits, but he felt that reference from numbered objects to printed or typewritten pamphlets was too cumbersome a method of supplying this information.

President Ward stated that a number of pictures in an art exhibition were entirely without meaning to him until he was informed of their significance.

Dr. A. R. Crook of the Illinois State Museum stated that Mr. Gilman's paper was of particular interest to him because of the probab-

¹ *Proc. Am. Assoc. Mus.*, V, 15-25.

ity that the Illinois State Museum of Natural History will open an art department in the near future. He was specially attracted by Mr. Gilman's remarks in regard to the color scheme of the walls of the rooms and asked if the use of ground glass as utilized in the new National Museum at Washington would not obviate the difficulty of a glare of light.

Mr. E. L. Morris of the Museum of the Brooklyn Institute of Arts and Sciences stated that he had been working for some time in the new National Museum and had found the glare of light accentuated rather than diminished by the use of ground glass.

Mr. Harlan I. Smith, archeologist of the Museum of the Geological Survey at Ottawa, Canada, presented the following paper:

MUSEUM WORK AT THE CAPITAL OF CANADA

Museum work at Ottawa, the capital of Canada, has recently received a renewed impetus from the completion of the new Victoria Memorial Museum building, and from the number of men interested in museum work who have been added to the staff of the Geological Survey. While the authorities of the Museum of the Department of Marine and Fisheries contemplate greater activity in the near future; while the National Art Gallery is pressing for a new building; and while the Ottawa College maintains a small museum, yet the greatest development centers in the Museum of the Geological Survey, which is naturally taking the lead in the museum work of the whole Dominion. Its policy of giving due attention to research, education, and recreation, without sacrificing any one of them, gives it a sound foundation on which to build.

The Museum is a division of the Geological Survey, which is a branch of the Department of Mines, and is thus supported by the Canadian Government. It dates from the foundation of the Geological Survey of Canada in 1843, and devotes its energies chiefly to the geology, mineralogy, paleontology, zoology, botany, and anthropology of Canada. In 1880 the Survey was moved from Montreal to the building in Sussex Street, Ottawa, and in 1911 to the present Victoria Memorial building.

The chief officer of the Geological Survey is the director, under whom are technical officers whose training especially qualifies them for museum work. They form the museum staff and from them an advisory committee has been appointed to take the initiative in all

museum matters. The best interests of the museum are considered to be served by encouraging the members of the staff to visit other museums, and to attend the meetings of scientists and museum administrators.

The new Victoria Memorial Museum building was erected at a cost of over a million dollars. It is practically fire-proof and is more than ordinarily satisfactory for museum purposes. The lighting is good by day, and can be supplemented by electric light supplied by dynamos in the building. There are three elevators for passengers and one for freight. At present seven large halls are available for exhibition while three more, now occupied by the National Gallery, are expected to be ultimately available for the museum. The adjacent land at the ends of the building provides ample space for additional buildings in architectural harmony with the main museum. Such additions would serve for offices, shops, and storerooms as more of the present building becomes needed for exhibition purposes. The building is maintained and cared for by the Department of Public Works, and is policed by the Dominion police.

The expeditions of the Geological Survey explore the more remote and varied regions of British North America, and because of the initiative, resourcefulness, and inventiveness of the men in charge, valuable collections are brought back to the Museum. So abundant is this material that the Museum is often able to send considerable quantities of specimens to other institutions. Specimens are purchased when needed, but the collections obtained by the survey are accompanied by much more valuable data in the form of photographs, maps, measurements, labels, accessories, etc., and the cost of collecting is less than that of purchase. One expedition in 1912, working about four and a half months, brought in one hundred and thirty-five boxes of specimens at a total cost of not over one thousand dollars, or less than eight dollars per box.

In order to prepare the material gathered by the Survey both for research and exhibition, skilled mechanics and artists are being added to the staff. It is recognized that one of the greatest needs of museums today is more mechanical and clerical help to release the higher paid specialist from much of the work which could just as well be done by others and so enable him to devote his entire time to his special work. Desirable shop work is often of such a special character that one has to search far and wide to find suitable men. One of the shops is devoted to the construction of relief models from topo-

graphic maps and photographs; another to preparing vertebrate fossils. Here the bundles of rock-enclosed fossil bones sent in from the field are unwrapped, the fossils freed from the matrix, broken bits cemented together, and prepared for exhibition. This shop is provided with the latest and most approved tools. In fact, all the equipment recently acquired is of the best, which in the end, of course, is the most economical. Some of the exhibition specimens are of old-fashioned mounting as obsolete as the frigates of Nelson's time, but they are being rapidly replaced by modern work from the museum's own shops.

Two of the large halls are already provided with cases; while the estimates for the current year provide for increasing this number to five halls. An Atlantic coast bird group about eighteen feet in length has been planned, a model for it has been made, and the material is partly prepared. An expedition is now in the field securing material for a group illustrating the Carolinian fauna, which extends only into the most southern part of Canada.

The public is welcomed during the process of installation, and we have many partial or tentative exhibits intended to be replaced by modern preparations as soon as possible. Before describing the exhibition halls there may be mentioned many study collections which contain some material too valuable to be subjected to the light of exhibition, specimens of value to scientists but of little interest to the average visitor, and other materials which do not lend themselves readily to exhibition. It may be of interest to note that in the anthropological department there are phonographic archives containing a large number of records of songs obtained from the various Indian tribes of Canada. Some of the tentative exhibits are especially simple, graphic, and pedagogic, in order that they may give elementary instruction and serve teachers and their classes, but such exhibits do not lack appreciation from the general public. One of these shows the difference between moths and butterflies. Another shows the life history of moths and butterflies. The labels are typewritten for the present in order that visitors may not have to wait until they have been fully edited and printed on the museum press. Some of these exhibits may be made permanent merely by perfecting the labels, while others will need rearrangement, remodeling, the substitution of better specimens, and the addition of more material, such as specimens for comparison, maps, models, photographs, drawings, casts, handbooks, and even scientific monographs. There is little appreciation

outside the ranks of museum workers of the amount of patient work necessary to install an exhibit so that it will be graphic and pedagogic, and so the museum work of the future may grow to be better than that of the past.

Some of the tentative exhibits are installed without cases, as in the hall of vertebrate paleontology, where they are enclosed by ropes and wooden bars supported by pipes screwed into iron disks of sufficient weight so that they cannot be easily displaced. Removable screens have also been made, every fourth one provided with a door and lock. Four or more of these can be laced together to form a room to surround an exhibit which is being remodeled or arranged. They are to be painted in harmony with the cases so that they are not noticeable at a distance, and when not in use they may be stored in a very small space. They take the place of temporary screens and are very much more economical as temporary screens are so often built and destroyed.

Temporary cases for an archeological exhibit have been provided at an expense of less than two hundred dollars merely by screwing some discarded case tops onto laboratory tables and painting them dead black. The tables cost about eight dollars apiece and serve very well for temporary purposes. When permanent cases are available the tables can be freed for use in the laboratory by the removal of only four screws. It might be said that these temporary exhibition cases entailed no expense to the exhibition side of the work, for the laboratory tables would be required in any event. This exhibit has been supplemented by scientific memoirs based upon collections from some of the regions represented.

Until general guides to the collections can be prepared a brief directory of the building has been printed on our own press. One of these will be framed and placed at the foot of each elevator and it is our intention to post them in public places in the vicinity. When each department can write two or three pages for each line of the present directory the result will be a brief guide to the entire Museum. A hand-book of some thirty or forty pages illustrated by fifteen full-page plates is in the hands of the printer but it relates only to one case of specimens, and while such hand-books are desirable, too many museums overlook the need of the public for a very brief guide to entire halls and to the whole museum. On the other hand, hand-books to one or two cases, similar to the one just mentioned, are also desirable. A visitor may have insufficient time to study the collection in detail, and such a hand-book enables him to study it elsewhere.

It illustrates more than half the specimens exhibited in the case, so the visitor from Halifax or Vancouver may carry to his friends at home a glimpse of a large part of the exhibit with a full description and reference to authorities, in case he cares to pursue the subject into original sources.

The Museum is making a special effort to prepare timely and useful exhibits. One of these, placed in the most conspicuous portion of the main entrance, was hastily made to meet an impending demand for knowledge. In 1912 the tent caterpillars were so numerous in the vicinity of Ottawa that they destroyed the leaves of many shade and ornamental trees in the city and many fruit trees on the farms, as well as forest trees. They were even so numerous that their presence on the tracks delayed railroad trains many hours. The number of eggs on the trees in the spring of 1913 showed that this damage would be repeated, so this exhibit was prepared for the benefit of the people. One side of the case shows the life history of the tent caterpillar and some of the trees which it attacks. On the opposite side of the case are shown some of the means of controlling this pest. There are birds, lumps of chemicals, and a pail of commercial tanglefoot, things of small value in themselves but indicating how people may protect themselves against this insect danger. Magnifying glasses are used as an adjunct to this exhibit so that some of the smaller specimens may be more easily seen. When pressing need for such an exhibit is past it may be retired or placed in another part of the building. This is an example of how officers of the Museum are endeavoring to find out what is useful to the people, to prepare a helpful exhibit, and to invite the people, through the public press, to avail themselves of it. The citizens pay the taxes which make the scientific work of the institution possible and the staff feel in honor bound to lay aside their research for a time in order to explain in non-technical language such results of their study as may be valuable or merely interesting to the public.

Another way in which the Museum has been useful is illustrated by a page of designs taken from Indian handiwork which was distributed by an art teacher among his students at the public schools for the purpose of bettering the designs of furniture, wall paper, stoves, etc.

Officers of the Museum have sometimes served the public on commissions or in other ways outside of the institution. For example, one of our men was a member of the international commission which arbitrated the seal question.

No admission fee is charged. The Museum is open to the public from nine to five on week days except Christmas. The impressions of childhood are so easily made that every possible effort is made to attract the children. It is hoped that even greater attractions may be offered to working people and children as public opinion develops and the Museum gains in facilities. Normal school classes frequently study in the exhibition halls under the direction of their teachers, and these students, who are soon to be teachers themselves in the scattered schools of our country, may spread far and wide the truths learned at the Museum. All classes, from the most humble peasant to the Governor-general are amongst the visitors. It is unfortunate that the hours when the Museum is open coincide so closely with the hours of labor as to give only those who have wealth or leisure the greatest opportunities to visit the Museum. It is really the people who are unable to travel, or perhaps to buy books and pictures, who need the services of the institution more than any other class.

Among other facilities of our Museum may be mentioned the library of the Geological Survey, containing over twenty thousand volumes on natural science, which is at the disposal of the staff and constantly receiving additions especially chosen for their use. The library naturally suggests a tie between the Museum and other educational institutions, making it one with the schoolhouse, the library, and the research laboratory. Newly acquired books are placed in a special book case, as are the recent magazines.

A lecture hall forms part of the equipment of the Victoria Memorial Museum building, and this year's estimates include funds for furnishing this hall with the necessary seats and with projection apparatus. Here will be held lectures for scientists, teachers and their classes, and for those who wish general entertainment along the lines of our work. Even now short informal talks by members of the staff, sometimes illustrated with lantern pictures or by specimens in exhibition halls, offices, and shops are given when desired.

Space in the lecture hall and other parts of the building will undoubtedly be used soon for the meetings of scientific societies and other organizations carrying on related work so that the Museum may be expected to become a center for the scientific activities of the country. Space may also be given, from time to time, for temporary exhibitions which may find a place in the Museum without disturbing the regular work. The National Art Gallery of Canada is even now occupying

three of the large halls of the building. It is expected that the Gallery will in the near future require a building of its own, and that the Museum will need the space now occupied by the Gallery.

The photographic division of the Survey is perhaps as well equipped as any in North America. It maintains a vast store of negatives taken on expeditions and in the Museum, and it makes lantern slides. The negatives form a national historical archive, which will be of increasing value as time passes. It affords illustrations for the publications of the Museum and the Survey and for scientific and educational works. They may also be used in the popular press and many will serve educational purposes through encyclopedias, text-books, magazines, and newspapers. The lantern slides may be used eventually throughout Canada, as well as in the lecture hall, for educational purposes.

In order to extend more widely the knowledge of the Museum, publishers are encouraged to make postcards from photographs furnished and carefully labeled by the Museum. One of these, for example, not only shows a picture of the Museum building, but informs the reader that the Museum belongs to the whole country, houses various natural history collections, carries on expeditions and research, prepares exhibits for the scientist, the teacher, and the pupil, and issues publications which are widely distributed. These postcards are handled through the regular trade and entirely without expense to the Museum.

In order to carry the Museum to the people of the country who cannot visit it in person, the Geological Survey for many years has made a practice of sending cabinets of minerals throughout the Dominion. A cabinet containing five trays of minerals with a book describing them is sent to certain of the higher schools throughout Canada, while a smaller collection in an exhibition tray is sent to lower schools. Other departments of the Museum will take up this extension work as soon as possible for the purpose of making the collections helpful to all the people of the country. This idea is in full harmony with the work of university extension, traveling libraries, and branch banks. Probably the Museum will become eventually a clearing house for all the museums of the Dominion. Material may be either loaned or given to the smaller museums, of which there are over thirty, most of them in the larger cities or college towns of the east. It would cause no loss to the people of Canada who support the Museum to give specimens to these other museums as there they would be accessible to more people and housed without cost to the government.

In this way the Museum would do its work more effectively than if all the specimens were held at one place. It would gain space for exhibits and reach a greater number of people without having to pay for the extra space, light, heat, and other maintenance.

The time will no doubt come when the Museum will go even farther than this and install useful exhibits and moving picture lectures on railroad cars which may be side-tracked at places where no museum exists. The business men of Canada both last year and this have sent a train known as the "Made in Canada Special" throughout the length and breadth of the country. This train contained exhibits of the manufactures of the country, and stopped only a few hours in the places visited, but it was thronged with visitors anxious to learn of the manufactured products of the country. Agricultural colleges and railroads have been using a somewhat similar method to uplift the people, and if business men find it worth their while to educate the citizens it would seem to the author to be the duty of educators to consider this method for museum extension. Revolutionary as it may seem, it is probably true that the museum work of the capital of Canada will, before many years have passed, include this kind of museum extension work among its activities.

The work of the Museum is apparently on a sound foundation. It would be difficult to imagine the kind of men we have on the Survey allowing excessive zeal for popular exhibits to vitiate scientific truth. On the other hand elementary educational work and recreation for the public is considered a proper and desirable part of museum activity. We may thus look forward confidently to sane progress in museum methods in the central Museum and in any other of the Canadian museums which may affiliate with it.

Prof. William C. Mills, curator and librarian of the Ohio State Archeological and Historical Society, then presented a paper entitled "Museum of the Ohio State Archeological and Historical Society."

Dr. Carl H. Eigenmann, curator of ichthyology in the Carnegie Museum, Pittsburgh, presented an illustrated account of his ichthyological explorations in Columbia which was greatly enjoyed by the members. The subject matter of his talk is printed in full in the *Indiana University Studies*.

The session then adjourned.

SESSION OF WEDNESDAY, JUNE 4

Morning

The Association assembled at ten o'clock at the University Museum, President Ward in the chair.

Mr. William Bevier Ashley of Demarest, N. J., presented the following paper:

THE PROMOTION OF MUSEUMS

The purpose of this paper is to propose that the American Association of Museums shall set about awakening and guiding such national interest in museums as must result in wide extension of these institutions adapted to the needs of each community.

You will not expect me to review the many conclusive arguments in favor of the greatest possible extension of museums. Mr. Edward S. Morse reduced the subject to a query twenty years ago, "If public libraries, why not public museums?" and answered his question with another in which was condensed the whole argument for museums, namely, "If there is the slightest necessity for a museum in the crowded metropolis, why does not the same necessity hold good in the small town and village?" But it would be an irreverence to the memory of Dr. George Brown Goode to fail at this point to quote his own emphatic wish, "I hope the time will come when every town will have both its public museum and its public library," and it is at least apropos to mention another wish he once expressed that this country should have a worthy system of museums by 1914. I respectfully submit that the inauguration of the movement now under consideration will be the greatest step yet taken to realize these desires of Dr. Goode, founded in his unexcelled knowledge of this subject.

The questions I wish to present, and in part to try to answer, are these: Why should this Association undertake this work? and, What is the outlook for success?

Twenty years ago, Mr. Edward S. Morse contributed to the *Atlantic Monthly* the article already mentioned, "If public libraries, why not public museums," in which the proposition before us was stated in a thorough and convincing manner. I judge that article had great influence in accelerating the trend toward better museum aids in public school teaching. It did not, I feel safe in saying, produce the result directly aimed at, namely, popular interest in the establish-

ment of museums in small towns and villages. Why not? Because the American public must be systematically educated in respect to a radical idea before it will take any interest at all in magazine articles upon that idea; and it is the American public who must support our museums. School authorities read that article as a matter of course; the business man and his family passed it by, unfortunately for them. Then, if systematic education of the public is a condition precedent to success in this matter, who has a prior right to that of the American Association of Museums to provide that education? Who, I will ask, has a prior responsibility to do so?

Several convincing factors combine to urge the present inauguration of this movement. I will not undertake to do much more than name each one. First may be stated the restlessness in educational circles regarding curricula, paraphernalia, and results in both the elementary and the higher schools. Despite this unsettled state, the use of the museum in public school work is steadily gaining ground. Now is the opportunity of the museum to assume its rightful place in the work of our educational institutions.

The museum, as Dr. Goode pointed out, must serve all classes, and today decidedly is the era of community improvement in which the museum has not yet taken an aggressive part. You will be interested to know that the suggestion of this movement is received by representative welfare organization men with both surprise and delight. Please note those words, surprise and delight. Such men in their opinions accurately reflect the spirit of the times, and consequently their estimates of a proposed measure affecting the public is of the first importance. It is certain that the Association will strike a responsive chord when it proposes the wide establishment of museums as an integral part of each community's life.

Furthermore, the many lines of activity for civic welfare create, themselves, a striking need for museums in every community. The anti-tuberculosis movement, the city beautiful, child welfare, mental hygiene; all such movements depend in large measure upon exhibits for effective presentation of their themes. These exhibits are chiefly educational and belong by the law of classification in museums as sociological data. But for lack of facilities, the great majority of towns and the smaller cities never see these valuable exhibits, a distinct loss to both the town and the cause. Much of these exhibits is of a temporary character, but a portion is of permanent value from the museum point of view, since the movements mark distinct proc-

esses and stages in the advance of civilization. Yet, excepting only the original material for the exhibits, these valuable data are destroyed, after serving a part of the population for a limited time only. The museum in the small town will become the obvious place of exhibition for movements of this kind, and the repository of records of their permanent results.

Again, commercial interests are rapidly adopting the exhibit as an ideal form of advertising; a tribute in itself to the rediscovered value of the museum. Guarded against misuse in this direction, how greatly the museum can aid in the dissemination of information about local industries and about all advance in the art of successful living. The interests of many towns are bound up in the development of their industries, and the museum wisely used becomes an invaluable factor in promoting them. As Mr. Rea has tersely said, "Museums are ideal agencies of intelligent publicity, appealing to the eye in times of recreation when the mind is open to impressions. Shall we not make them a clearing house of municipal progress, an expression point of community activity? Publicity of the right sort is essential to the success of popular movements. Why should not the resources of our museums be drawn to this work as occasion arises, and must we not believe that such coöperation will result in more generous support of all museum activities?"

In dwelling upon these newer uses for the museum, it is not to be supposed that the older are secondary in their attractiveness to the general public. If none of these arguments availed, yet the established place of the museum in the education and culture of a people alone justifies the greatest possible effort to increase the number of towns and cities maintaining such institutions.

There are other factors that urge the fitness of the inauguration of this work. The high-water mark in the library movement may be said to have been reached; and, without expanding that idea, I will suggest that it will seem to the public a natural transition to the museum as an object for similar development. Census returns for 1910 showed that libraries enjoying municipal support existed in almost every city of over 30,000 population; the total appropriation for their necessities being over \$6,000,000; yet but 25 of the 184 such cities were shown to have museums or art galleries thus aided, and to the total extent of under \$1,000,000, over half of which was for New York City alone.

Encouraging just such a new direction to public interest, comes the

great Peace Celebration, which by its very nature is bound to give a new impetus to interest in the arts and sciences, those two great divisions of the peace army which win her victories no less renowned than war's; nor can the industrial forces be given a minor place on that battle ground. It is safe to predict an increase of culture as one result of the lessons which will be drawn from the passage of a hundred years of peace between America and England. And it may not seem to you an inappropriate suggestion that our towns should be encouraged to inaugurate museums as local peace memorials in keeping with the coming celebration. So legitimate a motive must enlist the support of those who emphasize peace.

The coming exhibition of the wonderful Morgan art collection will give a decided impetus to interest in art, and will have its direct effect upon the community sentiment for a local museum in which, in some measure, one's own town may obtain a greater knowledge of this finest of arts. And so, too, at a somewhat different angle, will the widely advertised sensationalisms in art affect this movement, for the museum is almost sure to include the only art collection in the majority of cases.

There are still other factors to be considered, factors of a more specifically practical character, it may be, that favor the energetic prosecution of this work. Although there is no dearth of national movements just now, those that exist might for the most part be grouped in one case in any museum of sociology. Nearly all attack the evils in the body politic; disease, moral delinquency, mental defectiveness, industrial injustice, poverty, cruelty. I prophesy that despite the worth and necessity of these movements supported by private philanthropy, a new note which speaks for the cultural side of life, sounded for no one class, but for all, will come as a welcome relief to the ears of those who are constantly appealed to for the support of betterment work.

Besides this, there is the fact that in the main such societies usually restrict their appeals during the summer months. At first, though, this might not seem to augur well for a summer campaign. Yet this advantage will accrue to the Association, namely, that whereas later on the museum must take its chance in the morning mail with a score of other proposals, at this season it can have the field much to itself, and thereby gain a successful start. Again, the museum idea in a real sense will find more spontaneous sympathy in the holiday spirit than in the work-a-day mood. There is romance, and story,

and adventure, and achievement associated with the museum. Proximity to the world of specimens, the seashore, the hills, the fields, and the streams, will emphasize the suggestion that these things lying all about should be seen by the hundreds of thousands who are confined to narrower grooves of duty. Indeed, even the farm boarding house will endorse the suggestion, and the vacationist can scarcely go where there will not be something that will help him to visualize a museum in his home town which may become a permanent delight and education to his fellows. And yet this is not the chief argument in favor of a summer start. A high percentage of men and women to whom this movement will make its strongest appeal do not roam far in summertime. They will be found at their homes and in their occupations, and relaxed somewhat from the strenuousness of the cooler months. They will have leisure, and they will have inclination, to consider the proposal, and to talk it over, and to do something definite to set the movement afoot before the high tide of community activity again sets in.

The support of the work will come from many sources besides the host of friends already committed to the museum idea, educational bodies, religious bodies (for I shall propose to you the encouragement of museums in connection with religious work), art, and scientific, and historical societies, industrial and welfare organizations; all these will find some sympathetic point of contact with the proposed movement. Financial support for the Association in its work, as well as active and financial support for the local undertaking, will be immensely affected by all such interests.

Industrial concerns which perceive the legitimate service which local museums can render, and the dealers in museum materials and supplies, constitute another element of aid. The museum properly falls within the field of taxation, and municipal and state pride will soon take care of that. And, when the Association has aroused the land to a realization of the place the museum must occupy, and the public begins to lay itself out to secure museums, will not some new Carnegie arise to duplicate for museums that great philanthropist's deeds for libraries? Who can doubt it?

Passing from the consideration of dollars, just a word as to support in other respects. The local museum will be welcomed as a much desired repository for private collections, large and small, and as affording an opportunity for individuals to serve their communities by temporary loans of special exhibits. The industrial classes were

never so ambitious to know, and to see is to know. It is not unlikely that the movement would have presidential encouragement, and a recent news item makes it clear that Mrs. Wilson is a strong friend of the museum idea. To the objection that may be raised that present museums are adequate, and that our towns cannot hope to have such collections, and our people must go there to see these things I answer that local museums will stimulate interest in great ones, and will educate the community to a better appreciation of them; and, when the traveler returns home from visiting the National Museum at Washington, the local undertaking will not be held in contempt, but rather will be made the object of still more aggressive interest in order that the town may have the best that is possible for it. Under the guidance of experts, local expeditions, so called, in the interests of the museums, will become a new recreation and a new education for young and old. Interest will be stimulated in local history, and from that it is not difficult to reason to a better patriotism. We are promised prosperity, and prosperity means more money and more leisure, and those mean more traveling, and the local museum provides a new incentive to the collecting that is possible in foreign fields. A system of exchange between museums that will enable all sections of our country to gain a first-hand knowledge of the natural history of all the other sections, will be perfected. Each present existing museum may be considered as a unit in a museum zone with that zone to be developed through this museum, which shall assume oversight for awhile. Museum management will of necessity become a new study, calling for professional teachers, and there will be a wide opportunity for literary contributions to our magazines by museum authorities, and for lectures, and indeed for the creation of a museum periodical, which ought to become one of the most interesting and useful magazines of the day. A standard library upon museum subjects can be accumulated. Excess funds that may accumulate in the hands of the Association can be administered for the temporary help of new museum enterprises.

These are some of the possibilities of the movement. They are presaged upon the experiences of successful museums, upon the opinions expressed by museum authorities for many years, and upon general knowledge of human characteristics. I would add to these the great value of local museums in respect to the preservation of records of current events, which for the most part are now allowed to become dissipated and lost.

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Another way in which the Museum has been useful is illustrated by a page of designs taken from Indian handiwork which was distributed by an art teacher among his students at the public schools for the purpose of bettering the designs of furniture, wall paper, stoves, etc.

Officers of the Museum have sometimes served the public on commissions or in other ways outside of the institution. For example, one of our men was a member of the international commission which arbitrated the seal question.

No admission fee is charged. The Museum is open to the public from nine to five on week days except Christmas. The impressions of childhood are so easily made that every possible effort is made to attract the children. It is hoped that even greater attractions may be offered to working people and children as public opinion develops and the Museum gains in facilities. Normal school classes frequently study in the exhibition halls under the direction of their teachers, and these students, who are soon to be teachers themselves in the scattered schools of our country, may spread far and wide the truths learned at the Museum. All classes, from the most humble peasant to the Governor-general are amongst the visitors. It is unfortunate that the hours when the Museum is open coincide so closely with the hours of labor as to give only those who have wealth or leisure the greatest opportunities to visit the Museum. It is really the people who are unable to travel, or perhaps to buy books and pictures, who need the services of the institution more than any other class.

Among other facilities of our Museum may be mentioned the library of the Geological Survey, containing over twenty thousand volumes on natural science, which is at the disposal of the staff and constantly receiving additions especially chosen for their use. The library naturally suggests a tie between the Museum and other educational institutions, making it one with the schoolhouse, the library, and the research laboratory. Newly acquired books are placed in a special book case, as are the recent magazines.

A lecture hall forms part of the equipment of the Victoria Memorial Museum building, and this year's estimates include funds for furnishing this hall with the necessary seats and with projection apparatus. Here will be held lectures for scientists, teachers and their classes, and for those who wish general entertainment along the lines of our work. Even now short informal talks by members of the staff, sometimes illustrated with lantern pictures or by specimens in exhibition halls, offices, and shops are given when desired.

Space in the lecture hall and other parts of the building will undoubtedly be used soon for the meetings of scientific societies and other organizations carrying on related work so that the Museum may be expected to become a center for the scientific activities of the country. Space may also be given, from time to time, for temporary exhibitions which may find a place in the Museum without disturbing the regular work. The National Art Gallery of Canada is even now occupying

Association then authorized gathering of data for the "Directory of American Museums" which was published for the Association by the Buffalo Society of Natural Sciences in 1910. It was the purpose of the directory to obtain preliminary information necessary for the formulation of a definite program of work on the part of the Association which would be calculated to promote the development of museums, especially in the smaller communities. The extension of the Association's work along these lines was handicapped by inadequate financial resources and it is only in the last two years that the income has met the current expenses. Since the Association is now self-supporting the time may be considered ripe for discussion of the desirability of attempting further extension of its activities. The Secretary expressed the hope that Mr. Ashley's proposition would receive full and careful discussion. It was before the Association either to be approved and accepted in full, to be disapproved, or to be considered in some modified form. The Secretary stated that the Council had given long and careful consideration to Mr. Ashley's detailed proposition, and had finally passed the following resolution:

"It is the sense of the Council that at the present time it is inexpedient for the Association to undertake the experiment proposed by Mr. Ashley, but that the question of the promotion of museums be referred to a special committee to be appointed by the Chair."

In the ensuing discussion Dr. Frederic A. Lucas of the American Museum of Natural History gave some of the reasons why Mr. Ashley's proposition seemed to him inexpedient. He said: "It is proposed to stimulate the growth of museums artificially, but it should be remembered in comparing museums with libraries that libraries have arisen through a definite demand for them from the places where they have been established. It seems to me that museums that were founded in response to an artificial stimulus would be very much like a hot-house plant, and that after the stimulation was removed they would decline and wither."

Dr. Arthur Hollick of the New York Botanical Garden stated that he would like to see some practical example of the working of Mr. Ashley's plan before the Association should finally adopt it. He referred to the twenty-four years of unremitting effort necessary to develop a proper support for the Museum of the Staten Island Association of Arts and Sciences, and stated that a library differs from a museum in that it may be bought and paid for, whereas museum material cannot be bought in the open market but must be accumulated slowly and intelligently.

The Secretary stated that Mr. Ashley had submitted to the Council letters of endorsement and appreciation of his general plan from the directors of the divisions of recreation and education of the Russell Sage Foundation, from the United States Commissioner of Education, and from others.

The Association voted that a special committee be appointed by the Chair to consider Mr. Ashley's proposition and any other propositions of a similar nature which the committee may choose to consider. This committee is to report to the Council, which is authorized to make any experiment or undertake any plan of which it approves, provided no expense to the Association is incurred. The Chair subsequently appointed to this committee Messrs. Gilman, Rea, and Putnam.

The Association then proceeded to the election of officers for the ensuing year, with the following result:

President:

Benj. Ives Gilman, Secretary, Museum of Fine Arts, Boston, Mass.

First Vice-President:

Oliver C. Farrington, Curator of Geology, Field Museum of Natural History, Chicago, Ill.

Second Vice-President:

Arthur Hollick, Curator, Department of Fossil Botany, New York Botanical Garden, New York City.

Secretary:

Paul M. Rea, Director, The Charleston Museum, Charleston, S. C.

Assistant Secretary:

Laura L. Weeks, Secretary to the Director, The Charleston Museum, Charleston, S. C.

Treasurer:

W. P. Wilson, Director, The Philadelphia Museums, Philadelphia, Pa.

Councillors, 1913-1916:

Henry L. Ward, Director, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Edward K. Putnam, Acting Director, Davenport Academy of Sciences, Davenport, Iowa.

The Secretary then read the following resolution adopted by the Council:

Resolved, That the Council regrets that this Association does not include in its membership a larger representation of the members of museums of Art. It recommends that for the purpose of increasing the number of such members and of fostering relations with the American Federation of Art the Chair appoint a committee to consider the above subjects and to confer with a committee from the Federation with a view to coöperation.

A motion to adopt the resolution of the Council was unanimously carried. The Chair subsequently appointed on this committee, Messrs. Lucas, Kent, and Fox.

President Ward then extended to the Association a cordial invitation on behalf of the Public Museum of the City of Milwaukee to meet in Milwaukee in 1914. After some discussion of the relation of the place of meeting to any coöperation that may be arranged with the American Federation of Art, it was voted that the final decision of the next meeting place be referred to the Council with power to act. The Council subsequently accepted the invitation to meet in Milwaukee.

Mr. Charles Louis Pollard, curator-in-chief of the Staten Island Association of Arts and Sciences, New Brighton, N. Y., then presented a paper entitled "The Museums and the Boy Scouts." Following this the Association adjourned for luncheon as guests of the Philadelphia Commercial Museum.

SESSION OF WEDNESDAY, JUNE 4

Afternoon

Following the luncheon, the Association reconvened at two o'clock at the Philadelphia Museums, where Mr. William L. Fisher, assistant curator in the Philadelphia Museums, presented the following paper, which he illustrated by demonstrations of methods of fire making:

MUSEUM WORK FOR THE BOY SCOUTS

The boy scout movement has become such a large and important thing in America that this Association is fully justified in the consideration of ways and means of helping in its work. These ways are many and varied, because the field of scout activities is so broad that almost anything that touches life, especially out-of-door life, touches the scout. Museums of natural history have in their collections of

animals, birds, plants, and minerals, a wealth of material that with a little thought can be made immensely valuable to our boys. Museums of ethnology and of art have a somewhat more limited opportunity, but even they can find ways to help if they will. This paper is only suggestive, telling what has been done for the scouts in two different directions.

All scouts are interested in trees. Many boys, especially in our cities, have little opportunity to learn, even to know by sight, the common trees of their own locality. With that in mind, and not losing sight of the fact that the boy's interest in trees is that of the camper and trumper and not of the botanist, a set of lantern slides and some specimens have been found very useful in talks before audiences of boy scouts. The talk must be simple, telling very briefly the few things that a boy will remember, and that will help him to recognize at least half the trees that he may see along the streets, in the parks, or in the fields. It should include such obvious things as the appressed branching of the Lombardy poplar, contrasted with the drooping of the weeping willows and birches and the graceful arching of the elm. The spotted trunk of the sycamore and the bands on the Carolina poplar, as well as the characteristic patterns on some of our rough-barked trees, can be so shown as to make an indelible impression. Possibly the most valuable bit of teaching done by these lantern slides was the illustration of *Rhus radicans* or poison ivy. This knowledge is so essential to the health and comfort of every one who lives at all in the open that it is made one of the requirements for a first-class scout.

These lantern slides and lectures by members of the museum staff have been used not only in scout meetings in the museum but have been in demand for outside service.

The other thing that has been found very useful and interesting is a demonstration of the art of making fire without matches. This is a bit of woodcraft that makes a strong appeal to the imagination of every boy. The simplest of the several methods for demonstration is the use of the flint and steel. The three requirements are stone, steel, and tinder. The first need not be flint. Any stone that is hard enough to strike a spark will do. A bit of paving stone, a quartz pebble from the creek bed, or sometimes even a bit of portland cement, will answer if real flint is not to be had. Steel every boy has in his pocket. The back of a knife blade is the most convenient form. Tinder is the only thing that needs any special preparation. Prob-

bly the simplest tinder is made by burning cotton cloth and extinguishing the fire before it is all consumed. With these things and very little practice, any boy can be taught to build a fire. If the museum can give a demonstration and follow it by a gift of a bit of flint to each boy who attends, the institution will have earned a place in the esteem of the scouts that will be worth much more than it costs.

Other methods of making fire, the Filipino bamboo rubbing sticks, the fire syringe, and the Indian bow drill, may be used in the demonstrations. These are thoroughly practical, but require a little more apparatus and more skill and practice than the use of flint and steel.

Specimens of fire-making implements from primitive peoples in foreign lands may be shown to awaken a new interest in the collections in the museum.

President Ward.—"I am very much interested in Mr. Fisher's demonstration. I happen to be a member of the national council of boy scouts, and also of the local committee in Milwaukee, yet I am ashamed to say that boy scouting has not flourished in Milwaukee. We lack the proper method of financing. But I have been interested in seeing what it might be possible for museums to do in helping along this work, which I feel is a very important one and one that is embracing a very large number of boys in this country. I do not know just now what the figures are, but I believe they run up largely in the hundreds of thousands."

Prof. Wm. C. Mills (Ohio State Archaeological and Historical Society).—"At the exposition at St. Louis a contest in fire making was arranged between a white man and an American Indian, in which the white man won by a few seconds, his time being one minute and fifty-nine seconds."

Mr. Fisher.—"Professor Mills says that it took the American Indian two minutes to make his fire. I know of a civilized white boy who has made fire by that means in nineteen seconds. Along this line, there is one question which I should like to ask of some of the museum people who may know more about it than I do. When I strike the steel against the flint, I understand that the spark is made by fragments of steel thrown off by the hard rock. But I also get a spark when I strike two pieces of stone together, though not so good a one as from the flint and steel. What makes the spark? There seems to me nothing to burn, whereas with the flint and steel we know that

steel burns. If anybody can tell me this I shall be glad to know it. The piece of iron pyrite gives the best spark of any of the stones which I have shown here today."

Dr. A. R. Crook (Illinois State Museum of Natural History, Springfield, Ill.).—"When a piece of iron pyrite is struck with steel the friction causes sufficient heat to ignite the sulphur which enters into the composition of the pyrite. The odor of the burning sulphur is readily discernible. Less readily are sparks produced by striking together two pieces of steel, a piece of steel and flint, or two pieces of flint. But in each case the spark is the result of friction great enough to ignite small particles of the substance struck. When the friction is not sufficiently great to develop heat of such temperature as to cause oxidation, there may be produced incandescence at least. The particles resulting from the friction of two pieces of flint are usually simply incandescent."

Dr. Milton J. Greenman, director of the Wistar Institute of Anatomy, Philadelphia, presented the following paper:

INSURANCE AND PENSIONS FOR MUSEUM WORKERS¹

During the past two years, I have been interested in the problem of pensions for men connected with museums and research institutes. The more the subject was studied the deeper I found myself involved in the more comprehensive subject of social insurance. I venture to present a few facts upon this problem, with here and there a suggestion of favor or disfavor, trusting that the members of the Association may be interested in developing the museum aspect of a question which is just now receiving so large a share of the attention of social reformers and statesmen.

In order to explain the existence of pensions and to obtain a basic understanding of the problem, I would ask your attention for a moment to a few fundamental facts which concern every worker. I believe we must all agree that this world with its institutions and indus-

¹ *References:*

1. Old Age Dependency in the United States. Lee Welling Squier. Macmillan Company, 1912.
2. Calculations based on the Report of the Massachusetts Commission on Old Age Pensions, Annuities and Insurance.
3. "Our New Peonage: Discretionary Pensions." Louis D. Brandeis. *The Independent*, vol. 73, p. 187.

tries is designed for the happiness of man—every man, not a fortunate few; that the accumulated wealth of this world is the result of the toil of men—all men, not a selected few; that every man is entitled to his share of the goods of the world to maintain him in self-respecting happiness to the end of his days, and that such share should be computed by a formula which shall take into consideration his ability, his requirements, and his responsibilities.

Ideal social conditions do not exist for the great army of industrial workers of all grades, the men who furnish the brain and the muscle for the production and accumulation of the world's wealth. There are those who tell us that it is part of the scheme of nature to have misery and suffering among us, to have dependent aged to care for, and that charity is the human quality which balances these evils. As Mr. Squier has said, "this is largely the theory of poets, novelists, preachers and lawmakers. Upon this theory social workers and charity folk have gone about on their Good Samaritan errands." Modern scientific methods, however, have developed an altogether different attitude toward unfavorable social conditions, and misery, poverty, and old age dependency are to be reduced and eradicated just as we eliminate typhoid and smallpox from a community.

It is estimated that there are in the United States 1,250,000 persons over sixty-five years of age who are dependent upon public or private charity for their support, and that it costs \$220,000,000 per annum to care for this army of worn out workers—the workers who by their skill and labor have added their quota to the world's wealth. Economists tell us that more than 50 per cent of the workers of the United States receive less than a living wage. They have pointed out to us how through the development of our mining and manufacturing interests, the growth of transportation and other public utility corporations, the combination of many small concerns into large trusts, and the increase of governmental functions, the prospects of becoming independent are very materially lessened for the average American. His fate is to remain throughout life an employee of others, to furnish the brain and the muscle for the accumulation of wealth for the few who most frequently by chance rather than by superior ability or right, hold positions of control. To the employer he is part of the equipment subject to the same depreciation with age and wear, and when he has become so superannuated or crippled as seriously to impair business efficiency, the problem for the employer is how he may be dispensed with, how this human machine may be "scrapped."

As one result of the situation here sketched, various forms of insurance and pension schemes have been devised. And why has it been necessary to devise pensions for superannuated workers who, in the words of the New Zealand Pension Act, have "helped to bear the burden of the Commonwealth by the payment of taxes and by opening up its resources by their skill and labor?" The answer appears to the non-professional economist simple, namely, that these toilers in all lines of activity have never received the products of their own efforts. The average wage is barely sufficient for daily needs and there is nothing left to save for old age competence.

There have been devised in the United States a large number of pension schemes for the relief of aged dependents, for insurance against unemployment, accidents, and death. These provisions for relief have been very materially aided by the purely altruistic and humanitarian spirit which is so rapidly developing along with the knowledge of real conditions. These pension schemes have been classified by Mr. Squier under such headings as: labor organizations, fraternal benefit societies, industrial establishments, transportation companies, teachers' retirement funds, municipal provisions, and government pensions.

For present purposes I wish briefly to refer to the pension provisions of industrial establishments, transportation companies, and teachers' retirement funds.

NON-CONTRIBUTORY PLANS

The Standard Oil Company's plan is as follows: "First: Any officer or employee who has given twenty-five years continued and satisfactory service to this company and has attained the age of sixty-five years may be put on the annuity roll, at the discretion of the directors; and receive for the first year after retirement an annuity of 50 per cent of his or her average pay for the ten years preceding retirement; the annuity after this first year to be continued at the rate of 25 per cent. Second: Any officer or employee between the ages of sixty and sixty-five who has been twenty years in the service of this company may retire at his or her own request, provided the directors approve, or be relieved by the directors from further service and placed on the annuity roll at an annuity equal to 50 per cent of his or her average pay for the ten years preceding retirement; such rate being continued up to the time the recipient is sixty-five years of age and, there-

after, at the rate of 25 per cent—the annuity at the rate of 50 per cent to be for not less than a period of twelve months.”

The Public Service Corporation of New Jersey has established a pension system for employees whose compensations do not exceed \$1500 per annum. Any employee who has reached the age of sixty-five and has been continuously in the service of the corporation twenty-five years may retire voluntarily; at the age of seventy, after twenty years of continuous service his retirement is compulsory. The pension is calculated as follows: For each year's service 1 per cent of the average wage or salary for the ten years preceding retirement, provided, however, that no pension shall be less than \$240 annually. This seems to permit of the inference that \$1500 is the minimum wage on which a man may provide his own old age, sickness, unemployment, and life insurance.

The Pennsylvania Railroad pensions its employees after thirty years of service. The retirement is voluntary at sixty-five or compulsory at seventy. The pension is 1 per cent of the average earnings of the last ten years of service for each year of service. About twenty of the steam roads of the country have similar pension schemes. They vary slightly in details of management and in retiring age, but the proportion of pension to wage or salary is practically the same for all.

In the cases here mentioned, the funds are provided by the companies; no contributions are made by the employees, and they have no voice in the control of the pension funds. These instances are, perhaps, fairly typical of pensions intended to relieve the employer of superannuated and inefficient employees without a depressing effect upon the active force; to stimulate younger men to good and continuous service; to discourage the best and most experienced men from leaving for small increases in wages; to render men loyal to the company and to lessen the possibility of strikes. As one manager has said, “by the pension privilege we purchase the right of a working man to leave the service.” Thus we have a group of pension systems devised for economic purposes and commendable for the good they do. The objections to them are that they limit the mobility of labor, thus sacrificing the welfare of the individual to the good of the corporation, and that they do not give relief commensurate with the value of the service rendered. On an average salary of \$1000 per annum for ten years prior to retirement, a retired railroad employee after thirty years of service receives an allowance of \$300 per year.

Let us glance for a moment at another type of industrial pension plan.

CONTRIBUTORY PLANS

Armour & Company (1911) have established a pension fund obligatory upon all officers and employees with certain exceptions. The fund is administered by a board of three trustees chosen by the directors of the Company. Employees contribute 3 per cent of their monthly earnings. At the discretion of the board of trustees employees may be retired at the age of fifty-seven or at sixty they may retire on their own request, at sixty-five they shall retire on order of the board. The pension allowance is 2 per cent of the salary at date of retirement for each year of continuous service.

Morris & Company (1909) have a similar pension plan except that it is in charge of a committee of five, two appointed by the Company and three elected by ballot from among the employees. Employees contribute 3 per cent of their salaries to the pension fund. The pension begins at fifty-five, if the employee has been twenty consecutive years in the service of the company, and it is 2 per cent of the salary for each year of service.

Provisions are also made in both these cases for widows and children of a deceased pensioner to the extent of one-half of the pension he would receive if living. In both cases also, if an employee retires voluntarily from the service of the Company his contributions to the fund are returned without interest.

Here we have two examples of the contributory form of pension scheme, one managed entirely by the company and the other by the company and the employees.

While these plans have advantages over other non-contributory forms, they are also open to the objection that they limit the mobility of labor. They tend to tie men to one corporation, causing them to lose advantages which might otherwise be gained. Such forms of insurance also tend to weaken the organization of labor which seems so essential for the protection of workers.

Finally I wish to call attention to teachers' retiring allowances.

TEACHERS' RETIRING ALLOWANCES

While retiring allowances for teachers have been provided in many countries of Europe, in Russia as early as 1819, yet not until 1894 was such a law passed in New York providing pensions for teachers in New York City. Since that time the movement has extended quite

generally over the country. The laws passed by the various states are for the most part applicable only to the teachers in the largest cities.

I cannot take the time to review the various forms of teachers' pensions provided by state laws, but will say that they generally follow the contributory form (1 to 3 per cent of the salary) and that after a certain period, from twenty to thirty years, the teacher may be retired on one-third to one-half the salary at the time of retirement. I wish to comment merely by saying that the provisions seem meagre in many cases and that, unfortunately, pension plans have been formulated on insufficient actuarial data.

Finally, I will refer briefly to the pension scheme which interests most of us or at least comes nearest to the museum worker, I refer to the Carnegie Foundation for the Advancement of Teaching.

While a few of our larger universities, including Cornell, Harvard, Princeton, and Yale, had already established pension provisions for their professors before the incorporation of the Carnegie Foundation in 1906, the burden of pensions in every case now has been shifted to the Foundation. It seems to me a matter of regret that independent and especially contributory systems should be allowed to lapse. It will be wise some day to revive them.

I believe I may safely say that this Foundation has done more to shape opinion regarding retiring allowances for teachers than any other organization in the country. While the direct effect of its work in raising standards of education, especially medical education, is remarkable, on the other hand its influence has brought about some undesirable results. The suppression of a third-class medical school seems justifiable, but the effect on the small colleges is lamentable. They and their teachers are doing a good service.

Its rules for granting allowances are familiar to you. At sixty-five years of age a teacher in an accepted institution is retired at one-half salary plus \$400, provided he has been a professor for fifteen years, or an instructor, or instructor and professor, for twenty-five years. I will not take time for further details. There are some most commendable features in the Carnegie Foundation pension plan. It permits the teacher to move from institution to institution within certain limits without sacrificing his pension privileges. Its pensions are more liberal than any hitherto planned. Its provisions for widows and orphans are excellent. To it we are indebted for an instructive and valuable experience and an extensive literature on this important question of retiring allowances.

It is unfortunate that the relation of the Foundation and the beneficiaries should be so direct. In the minds of some there is a suggestion of charity relief in the administration of the fund. This was not intended and perhaps might have been avoided. The charitable support of any institution or activity is perfectly proper, under our present social standards, but the man who serves a charitable institution is not a recipient of charity. He receives a stipend for a service rendered and upon this basis manhood, self-respect, and independence are maintained. Had the Foundation endowed the teaching profession by grants to universities and colleges for the purpose of enabling them to pay adequate salaries, the semblance of charity would have been avoided. Again one might imagine that if the Foundation had organized a contributory system of pensions admitting teachers of all grades of all reputable colleges and universities to its privileges, using its endowment as a reserve guarantee of such a system, the relief accomplished would have been far greater, the moral effect better and the criticisms more favorable.

In considering the question of pensions, I must at least call your attention to the compulsory old age and invalidity insurance in successful operation in Germany, to the old age pensions of Denmark, to the contributory plan of Belgium, to the more ideal schemes of New Zealand, New South Wales, Victoria, and Australia, to the British plan of old age pensions from general taxation, to the compulsory insurance system of France, and also to the voluntary annuities provided by the states of Massachusetts and Wisconsin, and to the very ideal system of annuities provided by the Canadian Government.

But it is not my purpose at this time to discuss the merits of pension systems. I have attempted to bring to your attention the fact that the question of insurance and retiring allowances is in the public mind, and that many corporations and institutions have made provisions for those whose efforts have made business or other success possible. It seems to me that these first efforts at old age allowances are in reality conscience moneys, deferred wage dividends, for in most cases the worker never receives the full value of his efforts.

Far be it from my purpose to promulgate the doctrines of socialism. What we as Americans want is, to use that trite expression, evolution not revolution, and it is just here that the members of this Association may play an important part in moulding public opinion, with the idea before us of eliminating idleness, poverty, and old age dependency, and of assuring to every individual a dignified termination of

his worldly activities upon a competence which belongs to him by every known right.

It was not in mind to suggest any definite plan for pensions for museum men, but merely to bring to the attention of this Association the needs of such plans by reference to efforts of others in this work. I believe every museum should maintain a pension system for its curators, assistants, and employees of all grades. Museum curators are really teachers of an extraordinary type and, like teachers, have little opportunity of providing for old age or misfortune. The true value of their work can never be estimated and they are universally underpaid. I am pleased to note that The American Museum of Natural History has already established a pension system for its staff of workers. Its system is of the contributory type.

In conclusion it seems to me that a pension system for museum men should fulfil the following conditions:

1. It should care for the incapacitated at any age after a certain term of service and according to a fixed rate.
2. It should provide a retiring allowance at a certain percentage of the average salary for ten years preceding retirement, for each year of service.
3. It should provide for voluntary retirement at x years of age after w years of service, and compulsory retirement at y years of age after z years of service.
4. The pension value expressed in terms of United States money should be unalterable, except such alteration as might increase the value to the employee.
5. It should be contributory, one-half contributed by the employer and one-half by the employee.
6. It should be inalienable.
7. It should have provision for widows and minor children.
8. Under present conditions, each institution should manage its own pension fund. We must look forward, however, to a more ideal system in which perhaps the federal government, through an insurance department, through savings banks, or through the post offices will provide for the purchase of insurance and annuities by the combined funds of employer and employee. Insurance and annuity provisions might then be made compulsory upon employers and employees. By such a central provision, all contingencies could be met without impairing the freedom of the employee to shift the scene of his activities. The welfare of the individual would not be sacrificed for the good of the institution.

The one definite thing which I wish to propose is as follows: That the American Association of Museums should consider the problem of insurance and retiring allowances for men and women devoting their lives to museum work, in whatever capacity. That, in such manner as the Association may deem best, a scheme of pensions be devised and considered at two or more meetings of the Association, and when approved, be published in the *Proceedings* as a pension system for museums recommended by the American Association of Museums. I believe such a procedure will help to stimulate interest in this important problem, will serve individual museums as a basis in formulating pension plans and will be helpful to us all in overcoming that American disinclination to work together.

President Ward.—"This is a subject that is growing in interest, and will probably be coming into more museums than at present. As far as I know, the American Museum is the only one that has put a pension system in use."

Mr. Benjamin Ives Gilman (Museum of Fine Arts, Boston).—"I wish to express my hearty sympathy with Dr. Greenman's paper and the recommendation that it proposes."

The meeting then adjourned to inspect the Wistar Institute of Anatomy.

SESSION OF WEDNESDAY, JUNE 4

Evening

The meeting was called to order by President Ward, at eight o'clock at the Bellevue-Stratford Hotel.

In the absence of Secretary Rea, Mr. R. A. Holland of the City Art Museum, St. Louis, was elected secretary pro tem.

The Association then proceeded to a series of round table discussions. The first of these was opened by Dr. Edwin Atlee Barber, director of the Pennsylvania Museum and School of Industrial Art, Philadelphia.

HOW TO PREVENT GREASY DEPOSITS ON THE INSIDE OF GLASS CASES

Dr. Barber.—"In our museum we have been troubled so much by the deposit of a greasy substance on the inside of the glass, and on the

objects contained in the case, that I should like to know if anyone present can suggest a remedy."

Dr. Carlos E. Cummings (Buffalo Society of Natural Sciences).—"I have had a similar experience. Certain qualities of glass, I believe, when exposed to the air become covered in a very short time with greasy deposit. I have tried to remove it by polishing it with some very hard substance, but I have not succeeded and I know of nothing that will take it off. Out of fifteen hundred glasses which I received from Germany some time ago, only a very small number were free from this deposit. The people in Germany informed me that this would happen in many countries."

Dr. A. R. Crook (Illinois State Museum of Natural History, Springfield, Ill.).—"It occurs to me that greasy deposits on the inside of glass cases may be in some measure due to the union of dust-laden vapors of air with the excess alkalies used in the manufacture of glass. However near the truth this surmise may be, it has been my experience that ammonia, alcohol, and soaps of various makes are less effective in removing these deposits than is a solution of potassium bichromate and sulphuric acid in water. In a pint of water, to which four ounces of sulphuric acid have been added, dissolve four ounces of bichromate crystals. Rub the glass with an ordinary piece of cotton batting dipped in this solution, taking care that the solution does not come in contact with the hand. Rinse the glass thoroughly and it will remain clear for a longer time than if other cleaning agents are employed."

The next discussion was also opened by Dr. Barber.

MATERIALS AND COLORS FOR CASE FRAMES AND LININGS

Dr. E. A. Barber (Pennsylvania Museum and School of Industrial Art, Philadelphia).—"I suggested this topic simply to bring out information. Up to within the last four or five years, I think, it has been the custom in this country and in Europe to use ebonized cases, but many museums are experimenting now with mahogany and cherry. These woods are very beautiful, but they do not harmonize with everything as ebonized cases do. Recently, I believe, some museums have adopted a dark gray oak with very good success, and it is safe to say that this harmonizes with almost anything. I should like to hear suggestions from the members."

Mr. E. L. Morris (Museum of the Brooklyn Institute of Arts and

Sciences).—"Our experience in the Brooklyn Museum represents the greatest amount of changing in the shortest time. I may be saying things which Dr. Lucas would have said if he had risen first. We started in the Brooklyn Museum with a great legacy of mahogany cases with more woodwork than the eye could possibly escape. In the department of fine arts these were quickly replaced with black cases. In our department of ethnology the mahogany cases were all scraped and painted a dark green with the purpose of getting away from the appearance of massive furniture. In our natural science halls we have been controlled by the legacy of mahogany cases, except that in the hall of plants we have made a new departure and are using cases of simplified lines finished in dull oak. It is a fact that the eye is distracted by numerous lines and surfaces of cases that are elaborately designed. Mahogany is used with a polished surface; this reflects light, which is a further distracting element. I believe that I am safe in prophesying that we are about to discard all mahogany in the natural science series."

Mr. Edward K. Putnam (Davenport Academy of Sciences, Davenport, Iowa).—"I have come in contact with retail chemists who are experimenting with colors for backgrounds of display cases. I understand that the tendency is to adopt a gray-finished oak as the most satisfactory background. Mahogany detracts from the objects displayed rather than otherwise."

Mr. Benjamin Ives Gilman (Museum of Fine Arts, Boston).—"The choice of gray oak for the woodwork of cases is interesting as showing a tendency to revert in museum fittings to the dull grayish-brown or yellowish-gray advocated years ago by Dr. Möbius as the best all-round color for museum backgrounds. Rough plaster gives a tint of the same general character."

Prof. Wm. C. Mills (Ohio State Archaeological and Historical Society, Columbus, Ohio).—"We are just going into a new building, and the question of cases is one to which we are giving some consideration. I have gone to trouble and expense in looking at almost all of the museums in the country to see and understand their exhibits to the best advantage. I am deeply interested in this subject of cases, and I am as yet in the dark as to what to do. I should be glad to hear further discussion here."

Dr. Frederic A. Lucas (American Museum, New York).—"In the Japanese and Southwest Indian halls, the cases have been painted in the first instance a dark green, and in the other an olive green, with

remarkable success. Before painting, the mahogany cases were the first things one saw upon entering the halls, but after the painting they were not noticeable."

Mr. H. L. Madison (Park Museum, Providence, R. I.).—"I am greatly interested in the matter of cases at this time, because within the next two years we expect to purchase fifteen thousand dollars' worth of cases for our museum in Providence. I have been gravitating somewhat toward the Library Bureau metal-frame case as against the wooden-frame case. The only thing I have found that comes anywhere near it in wood is a case with a very narrow frame made at the Boston Museum of Art by the superintendent of the building. It gives the minimum amount of wood in front of the eyes when looking at the object. I would like to hear criticisms of the metal-frame case, as well as others."

Dr. Lucas.—"The details of the Library Bureau type of metal case were worked out by Mr. Beers and Dr. Bumpus of the American Museum, and we use many of those cases. We finish them in copper or gun-metal, according to the nature of the objects which they are to contain. I think they do very well for small cases. They have an advantage over the wooden-frame case in opening and shutting much better. The trouble with the wooden frame is that if it is tight it will injure the woodwork to open the case, whereas a metal case can be opened and closed many times without injury. The gun-metal cases in the Liverpool Museum are very fine. They cost about \$650 a case, which is much cheaper than we could build them here, where they cost about \$1500 each.

Mr. Louis Earle Rowe (Rhode Island School of Design).—"I would like to say a few words about the case made in Boston. While it is built of wood it is constructed in such a way that it has never been damaged in the way referred to by Dr. Lucas. Any one can raise the upper part of the case. It works so easily that a lady can easily lift it to get any object out. This is also about the only dust-proof case that I have ever seen. If the members wish, I will bring to our next meeting photographs of these cases and samples of the wood, including the finish, and be able to explain them more fully than I can tonight."

Mr. Frederic Allen Whiting (Cleveland Museum of Art).—"One thing in favor of the Library Bureau cases is their great advantage for storage. They can be taken apart entirely when a gallery has to be cleared, and put in storage in a very small space. I consider that the only advantage the Library Bureau case has over the Boston case."

Mr. James C. Boykin (Bureau of Education, Washington, D. C.).—
“If you will allow me, I would like to state my experience in the matter of cases. For the last twenty years I have been in charge of exhibits of the Interior Department, at several exhibitions. In my early days I had experience with a lot of polished oak cases and some mahogany cases. It is our custom to ship the furniture to exhibitions, and at their close to send it back home and store it. When another exhibition takes place, we ship the furniture again to that exhibition, then take it back home and store it again. In all these movements the polished oak cases were badly scratched and had to be repolished. The cost of doing that was considerable and the results were not always satisfactory. In a Charleston exhibition our furniture was stored in a very dry cellar, and while there the wood was warped all out of shape in many instances. When we shipped it north the weather was just the reverse; it rained for a long time, and the air was saturated with dampness, and those cases that had warped, swelled up and burst in the other direction, and we had to make them over again at more expense. So in those times when we used hardwood cases we were constantly rubbing them over and repolishing them. But something that I saw suggested the use of black cases, so at the next exhibition which we attended we had our cases made of a very much cheaper wood painted drop black. It was a perfectly black case, entirely different from the cases you saw this afternoon, which are a shiny black, due to oil in the paint. We tried that and found it unsatisfactory; but a dull black we found more satisfactory. For some cases we used a dark green; and a light gray is good for some things; but this black in japan will harmonize with anything. The black case does not bring the wood into prominence. The object is not to display woodwork but the material inside, so you will find that the black case will bring the exhibit into prominence better than anything you have used. Of course it is necessary to use different colors on the inside of the cases.

“As to the metal cases, there is a man at the National Museum who can do almost anything. He has devised a metal case which is the best I have ever seen. They don't believe in it at the National Museum, but I am going to try it for San Francisco and I think it will work out very well. I believe in a light frame, and for that reason I consider the metal case desirable.

“An advantage which I find with drop black is this. When we go to an exposition and find a case is badly knocked up, showing white

and not black, it is the simplest thing in the world to put on a little of this black. That cannot be done with the shiny black, or with any other paint I ever saw."

Mr. Whiting.—"I know of another case maker in New York who will build a metal-frame case which I know the Metropolitan Museum has used for some time. His name is Charles F. Healy, and he makes a less expensive case than the Library Bureau."

Mr. Madison.—"The question has been raised regarding the type or shape of case, and also the color of the framework. We received six Library Bureau cases last week. The metal is not gun-metal, nor is it black; it is what I call a bronze metal. When you put it up you can scarcely tell which is metal and which is wood, they match so perfectly. Many samples were submitted before we accepted what we wanted. The Library Bureau submitted plans and did just what we asked them to do in every way; and the cases correspond almost exactly with the wood case of the Boston Museum."

Mr. Thomas L. Austin (Erie Public Museum, Erie, Pa.).—"I get the impression that this discussion is more from the point of view of the museum man than of the visitor. The average visitor who looks at your exhibits does not care what the case is, or its color. He is interested only in the contents; if they are modestly displayed on a background that does not glare at him, he goes away satisfied; and if you ask him what the case was made of he cannot tell you. After that, it seems to me that the case should be governed altogether by individual taste. The case which obstructs the least light, thus displaying the fullest view of its contents, seems to me the best thing."

Dr. Barber.—"Has anyone here had experience with polished wire-glass for the protection of valuable exhibits? We have experimented a great deal and have constructed one case with wire-glass. The question is whether the use of wire-glass in cases attracts the attention of the visitor to the fact that the case contains something particularly valuable."

Mr. Douglas Stewart (Carnegie Museum, Pittsburgh).—"In that connection, we are using double plate glass for the protection of cases containing gems. The extra sheet of glass rests on a frame about three and one-half inches from the bottom of the case, and the regular outside glass is two inches higher. You look through a double plate glass but you don't notice the second one. So if the outer glass should be broken, you still have to go through one two inches below."

Mr. Madison.—"I would like to say a word about the impression

some people seem to have regarding cases. Although it may be true that many people do not notice individual cases, our experience is that if the case is made attractive, or if all the cases in the room are made attractive, the visitor, without knowing why, is drawn to the collection in the case. We find that this is followed out fairly well in our exhibits. If the background is attractive, a person may go to the case because of its attraction as a whole. For this reason we expect to continue working on the plan that no case is too good for our institution, and we must have the very best we can get, even though it may cost more. That is the reason why I brought up the subject of metal cases tonight."

President Ward.—"I think Mr. Madison's point that whether or not the visitor analyzes and discovers what is right or what is wrong, he will still be impressed favorably or unfavorably, is a very good one indeed. I think that many things in our museum exhibits are not consciously analyzed by the public; yet they leave just as strong an impression favorable or unfavorable to the entire exhibit."

The next discussion was opened by Miss Anna Billings Gallup, curator of the Children's Museum in Brooklyn.

GUIDES OR DOCENTS IN MUSEUMS

Miss Gallup.—"The program is rather misleading. My object in selecting this topic for discussion was to find out what the museums employing docents have been doing, and some of the results of their work. I think it necessary that young children should learn how to use the material which is displayed, and so far as we have been able to work with the children we have tried to enable a child to do original work. I thought that tonight our friends from Boston might describe their work in detail, and perhaps other museums who have docent experience will tell something about their work."

Mr. Louis Earle Rowe (Rhode Island School of Design, Providence, R. I.).—"In Boston there are three kinds of service. Sunday docent service consists of talks given in the galleries, in which the intention was to start with one or two objects very definitely, and from that branch out along the lines which interest the group of people you are working with. The talks were supposed to last half an hour, but those who have been giving them found it difficult to get away after one and three-quarters or two hours. That is complimentary; it means that

the people want it. The second feature is the daily docent service, where any one coming to the museum makes application at the door, and is shown certain things. One day a group of three came in an automobile. We started them around the galleries, and found that they were greatly interested in gems. We learned that they were jewelers from Attleboro, and in a few days they came back again, and later sent up their apprentices. The third line of docent work is with the public schools, and in this we have been very fortunate, as the school-teachers are with us constantly."

Mr. Frederic Allen Whiting (Cleveland Museum of Art).—"Some of you might be interested in an experiment which I tried at Indianapolis last year. We had a small museum with inadequate funds, but we wanted to do something for children. We had only one docent and as many as six hundred children in one afternoon. About the middle of the year I arranged with the principal of a training school for teachers, which graduates about forty pupils into the public school system, to give all the normal school pupils part of their training in our museum. In order to afford them the best advantage and facility, we allowed them regular days to take charge of lectures. Other museums might get in touch with training schools in the same way, and the students might be brought in and shown the use of museum material."

Dr. E. A. Barber (Pennsylvania Museum and School of Industrial Art, Philadelphia).—"It seems to me that a woman would be far more intelligent than a man in such a capacity. We have great difficulty in getting a man. I think this is a subject worthy of consideration."

President Ward.—"In Milwaukee we have had for many years two women attendants up to quite recently. My feeling, though, has been that a man is preferable to a woman for general purposes for which attendants are secured. We sometimes have a large crowd on Sundays, occasionally running up to forty-five hundred or more, making the room quite congested. Not infrequently a gang of half a dozen young hoodlums will try to run things. There have been cases in which they picked up the woman attendant and carried her out in the hall and put her on the floor."

Mr. Benjamin Ives Gilman (Museum of Fine Arts, Boston).—"When we first started the docent system in Boston, we felt that a new title was necessary for those engaged in this work. They were not to be instructors in subjects, but interpreters of objects; nor were they to be simple guides giving parrot-like information at second hand. The cardinal principle of the plan suggested the name. This principle

was that docent service should not occupy any one's whole time, but only intervals from private work over the same objects that would be interpreted. Only in this way could the service be fresh and vital. Otherwise it would soon become lifeless, official repetition of sterilized items of knowledge. A docent must be pupil still and teacher already. The word "docent" well expressed this demand, for as originally used in the German universities, the title docent applies to a class of persons intermediate between students and professors. They do some teaching, but in general are at the same time studying and publishing with a view to appointment as professors. Accordingly, those assuming the new rôle of gallery companion in our museum were called docents. The office has since been fulfilled by all of our officers and by many whom they have invited from other institutions and from the community."

Mr. H. L. Madison (Park Museum, Providence, R. I.).—"In view of what Mr. Whiting has said about normal school preparation, and of what Mr. Gilman has just said, I think you may be interested in what happened a short time ago in our museum. A young lady came to the office and said she was a graduate of Wellesley College. She was doing work in the art museum there, preparing herself for museum work, and she wanted to know if we could give her some work during the summer months in order that she might become acquainted with the natural history side of museum work. So she is coming during July and August, and we are going to give her all subjects. Among them will be docent work for her own experience, and in order that we may learn something from docent work of that sort. I am very much encouraged, and I am looking forward to the time when the geological department of Brown University will prepare itself for graduate students, some of whom may work in the museum."

Mr. Rowe.—"Doubtless you all know that a training school for curators was started here in Philadelphia by Mrs. Cornelius Stevenson of the Pennsylvania Museum and School of Industrial Art.¹ Somewhat the same work was organized at the Museum of Fine Arts in Boston two years ago. Four Wellesley College graduates were given the opportunity to associate with the curators in charge and to become acquainted with all branches of the museum work. This class was made responsible for the installation of new collections. One of these young women is now engaged in museum work in Cincinnati, two

¹ *Proc. Am. Assoc. Mus.*, III, 115-119.

others are in the Boston Museum, while the fourth has been doing docent work in Providence during the past year. Wellesley was so encouraged by the enthusiasm aroused in these students, and by the quality of their work that it has this year laid some elaborate plans whereby the institutions in Boston may work in conjunction with Wellesley in offering advanced work in a number of lines. This may interest some of you who are looking for docents."

The next topic was discussed by Mr. Frederick L. Lewton, curator in the division of textiles in the National Museum at Washington.

HAS THE GENERAL MUSEUM A FIELD OF USEFULNESS OUTSIDE THAT OF GENERAL EDUCATION?

Mr. Lewton.—"A general museum may be considered as one which is not exclusively devoted to one subject, as fine arts or natural history. Such a museum may be large, like the National Museum, or may be represented better by many of the museums in our smaller cities. We will agree that the principal function of a museum nowadays is education, but the question asked is whether or not the museum can be made of use in other and more special ways. Several papers read before us in the last two days have shown special uses of museums. Professor Hooper told us of their value in vocational training. Mr. Smith gave us examples of the work which a museum may do in arousing public interest in matters of health and practical horticulture. Mr. Pollard's talk on the use of a museum in special work with boys showed us another very profitable line of activity. The small general museum can also be made of great value in illustrating the industries of a town, and in presenting to the public local problems and arousing a public spirit to solve them.

"A short time ago in Lawrence, Mass., I attended a very creditable exhibition of articles made in that city. There was the nucleus for a local museum, for most of the stages of manufacture of each article were shown. The exhibit had the support of the manufacturers because it helped business and aroused local pride in the citizens. A larger general museum will find its collections of much more general use. I hope I may be pardoned for giving some specific instances of the use of collections in the National Museum at Washington, in a way which we hope to extend.

"A concrete example of this use of general museums occurred as

follows: The decision of an important patent infringement case was given to the defendant on the ground that a specimen containing the idea to be covered by the patent had been for years on exhibition in the National Museum in Washington. The specimen was a bundle of cocoanut fiber yarn wound in a curious fashion and an example of hand work from the Fiji Islands. It so happened that the system of winding used in this specimen was an exact duplicate of the work performed by the machine which the plaintiff claimed had been infringed upon.

"Another case is illustrated by the reference made by a manufacturer of spindles to the old Slater spinning frame now on exhibition in Washington. In order to prove whether the spindle was driven by band or tape, the manufacturer visited the Museum and made an examination of the original machine.

"The collection of fabrics has been used by decorators, dressmakers, and students of design, and the study collection of small samples arranged by periods is being prepared for use in determining the general period of manufacture of any sample of fabric. The collections of raw materials of authentic origin and scientifically determined, such as specimens of wood, fibers, gums and resins, rubber, etc., are made use of in matters of dispute, and call is sometimes made for information from the Bureau of Standards, the General Appraiser's Office, and so on, for comparison of material with absolutely authentic specimens."

The next discussion was to have been opened by Mr. Henry R. Howland, superintendent of the Buffalo Society of Natural Sciences. Mr. Howland was obliged to return to Buffalo before this subject was reached on the program, and in his absence Dr. Carlos E. Cummings of the same institution stated briefly the idea which Mr. Howland intended to develop.

COÖPERATION BETWEEN SCIENCE MUSEUMS, ART GALLERIES, LIBRARIES, AND HISTORICAL SOCIETIES

Dr. Cummings.—"About a year ago at a meeting of the directors and officers of the Historical Society, the Art Gallery, and the Natural History Society, an organization known as the Buffalo Educational Union was formed for the purpose of encouraging coöperation, of preventing as far as possible the duplication of work by a number of institutions. It was this idea which Mr. Howland intended to develop tonight.

Mr. R. A. Holland (City Art Museum, St. Louis).—"Our museum is situated about six miles from the center of the city, located in the center of a park of about thirteen hundred acres. The people have to walk about three-quarters of a mile to get to the city. About six months ago it occurred to me and to the librarian, but especially to myself, owing to the location of our museum, that if I could not get the people to me, the next best thing to do was to go to the people, so I proposed to the librarian that he have some galleries used for our collections. We have now on foot a plan to install some of our material from month to month in the library. By this coöperation with the library we can reach the people and stimulate interest in art as is possible in no other way. I am also doing the same thing in public schools. I am circulating pictures in high schools, in training schools, and even in the common schools. It is my aim, and should be the aim of every art museum director, to coöperate to the fullest extent with every institution for art education."

Mr. Herbert E. Sargent (Kent Scientific Museum, Grand Rapids, Mich.).—"Would it not be better for the historical society to be allied with the museum than to be a separate institution?"

President Ward.—"There is some relation between a museum and a library. About fifteen years ago Milwaukee decided to construct a new building for its public museum. The library and the museum were then located in rented buildings, three-quarters of a mile apart. It was suggested that both the library and the museum be housed in the same building. That was done, slightly more than one-half the space being devoted to the museum, and the remainder to the library. I do not know just when the habit became prevalent, because I was not in Milwaukee at that time, but when I came to Milwaukee you could ask the policeman, or the conductor of the street-car lines that passed the building, and not one out of twenty of them could tell where the museum was. That was the library building. Fully seventy-five per cent of the citizens, I think, even at the present day, are imbued with the idea that the library owns the whole building and that the museum is a department of the library. We have just finished building an addition costing over \$40,000, yet a citizen asked me recently, "Is the museum part of the library?" They have got in the habit of calling it the library building, and they won't change. I had the manager of the street-car company issue orders to the conductors that they should call the building "Library and Museum" or "Museum and Library;" that both should be recognized when they pass

the corner. I did not want to make myself too much of a nuisance and so did not insist on their doing it. We now own more than three-quarters of the building but we are still laboring under the same difficulty. More people are coming there now and the library complains that more than fifty per cent of the passengers carried in its elevator come to visit the museum. Yet the library gets the full credit, and we are somewhat unknown. All through Wisconsin there seems to be the opinion that it is quite the proper thing for libraries to establish museums. Some years ago I had the pleasure of attending a meeting of the Library Association of Wisconsin, and addressing them on that subject. The purport of my message was that if it was possible for any other interests to take up the establishment of a museum, for heaven's sake let the library leave it alone, because when a library takes up a museum it is dead almost certainly from the day it starts, for the reason that library people are not trained for and know nothing about museum work; their work is absolutely different. We have in Wisconsin quite a number of museums run under the auspices of libraries, and every one of them is dead. The only service they perform is to save to posterity certain historical relics, but the mere fact of their existence prevents or holds back the establishment of a live museum in the community."

Mr. Louis Earle Rowe (Rhode Island School of Design).—"Thirty-six years ago our institution was an art school solely. A few years later, in response to circumstances and public demand, a museum was started as a part of the School of Design. The museum has grown until at present it is one of the finest museums outside of the three great ones in New England. It has some very choice objects, including the Colonial House, with sixteenth century furniture. Even some people in Providence do not know that we have a museum of art there; they have always known the institution as the School of Design solely. Where you have two institutions, a library and a museum, one or the other has to be very much more in evidence in the public mind. I think the School of Design offers an example of this point."

Dr. Cummings.—"The case in Milwaukee is the same as it was in Buffalo for some time. Our museum shares one building with four other institutions. For many years we have been struggling to convince the public that we are separate from the others, and we are only just beginning to succeed. Only a few people in the city are aware that the building contains anything beside the library. I had occa-

sion to go to Pittsburgh a few months ago, and in the main square in the town, I asked a policeman, "Where is the Carnegie Museum?" He said, "I don't know." I then went across the street and asked another policeman if he could tell me where the Carnegie Museum was. He said that he had never heard of it. Then I went to other men and asked them, "Where is the Carnegie Library?" At once they recognized it, and when I asked for the Carnegie Museum they did not know anything about it."

Mr. Douglas Stewart (Carnegie Museum, Pittsburgh).—"The policemen in Pittsburgh were perfectly right. The Carnegie Museum does not own the building; it is a tenant of the Carnegie Library, and the building is known as the Carnegie Library Building. The library is kept up by the taxpayers of Pittsburgh, while the museum and art department are kept up by Mr. Carnegie. The official name of the building is the Carnegie Library Building."

The next topic for discussion was opened by Prof. William C. Mills of the Ohio State Archaeological and Historical Society.

SHOULD SMALL MUSEUMS CONFINE THEMSELVES TO LOCAL COLLECTIONS?

Professor Mills.—"In answering the question which our subject brings before the Association, I shall ask you to bear with me in the statement that small museums receiving their funds as an appropriation from the state should confine themselves to local explorations and collections and to developing the local field so that it will be of great importance to the people for whom the museum was established, as well as for the scientist. We cannot, as a state museum receiving funds from the legislature, go into adjoining states to carry on explorations, but these funds should be used solely for state explorations and the building up of a great local museum.

"At the present time the Ohio State Museum has practically two departments, namely, archeological and historical. In these two departments we feel justified in saying that Ohio can furnish the very best material to be found anywhere in the country. In archeology, Ohio perhaps surpasses any other state in the Union for the great number of remains of prehistoric man. I was told about fifteen years ago that, in order to build up a great archeological museum, we would be compelled to go into other states for the purpose as our state had

been depleted by the larger museums. A few years ago I saw the gentleman who gave me the information and I told him that if the society I represent was able to carry on its explorations for the next fifteen or twenty years we would not need to go out of one county; that Ross County alone could furnish the necessary mounds and village sites to occupy the time of the Society for at least fifteen years unless certain cultural investigations were undertaken which would necessarily take it into adjoining counties.

"For more than a half-century Ohio has been the hunting ground for many of the largest museums of the country, and they have taken out of the state vast quantities of material which, to a certain extent, has not been available for examination and study up to the present time. Therefore, it is the purpose of the Ohio State Archaeological and Historical Society to build up its archeological museum so that when one wishes to examine the archeological remains of Ohio he can see a representative collection in that one museum. At the present time you can visit the Field Museum at Chicago, the American Museum of Natural History in New York, the National Museum in Washington, and even the great museums in European countries and find in each a collection from Ohio. Perhaps one of the largest collections ever taken out of the state was made by Squier and Davis about 1846. This collection was for some time stored in the State House at Columbus. It was then sent to Washington in the care of the Smithsonian Institution and finally sold to a gentleman in England, and now we are compelled to go to England to study the early collections of Ohio. It is our purpose to make casts of this collection and install them in our museum.

"The second phase of our museum is historical, and we have in Ohio a territory having as much historical interest as any other state in the Union. You will recall that in September we expect to celebrate the centennial of Perry's victory, and during this year and the next few years we can celebrate the centennial of many historical events of great interest to the entire nation. On the twenty-first of June we can celebrate the centennial of the great Indian council held in the city of Columbus, June 21, 1813, when General Harrison appealed to the Indians to espouse the cause of the Americans. The Society has lately come into possession of the Logan Elm and we have now dedicated the site of this elm, consisting of about five acres of land, to a park known as the Logan Elm Park. It was here that Logan made his famous speech that has been printed in every tongue and known in every civilized country.

"It is the province of the Ohio State Archaeological and Historical Society to care for and preserve all places of historical and archeological interest, and to this end, the museum proposes to be of interest locally and to confine the museum exhibits to Ohio material."

Mr. Herbert E. Sargent (Kent Scientific Museum, Grand Rapids, Mich.).—"I believe that the primary function of a museum is to cover the local field. In every line of natural history there are local birds, local flowers, and local trees. But I should not go so far as to exclude other things. In our own museum, we are glad to have Mexican and South American pottery for comparison with local pottery. We are also glad to have a few European and Japanese birds to compare with our local species. I think a certain amount of outside material is a very valuable feature in a local museum; but the important thing is that the museum should be as representative of its locality as possible."

Professor Mills.—"I wish to say that we use foreign material with classes in archeology, but that we do not propose to show it in the exhibition rooms. I want to make the museum as nearly as possible an Ohio museum, illustrating every river, every valley, and every part of the state, so that anybody coming there can see at a glance that it fully represents Ohio."

President Ward.—"It seems to me that there are two points here for consideration. When I go to the American Museum I think the Milwaukee Museum is a small one; if I go to some other museums I think the Milwaukee Museum is a large museum. It depends upon the point of view. The other point is, what is the purpose of the museum? In Milwaukee we conceive the purpose of the museum to be general education. It is not an archeological nor a geological nor a botanical museum, but it is all of them combined. We hope and try to have the local side of the subject treated fairly; we think that is the main feature, but we are dealing with school children, and we feel that when a child reads in his geography something of the animals in Australia, he ought to be able to come to the museum and see some of their characteristics. If the children are studying Africa and read about the lion and the rhinoceros, we think the city museum should have a lion or a rhinoceros on exhibition. It would be very foolish for us to have a great series of African animals to the exclusion of others, but I think we ought to have more of them in order to meet what seem to me the legitimate requirements of our work."

Mr. Sargent.—"We adopted the policy of developing the local col-

lections first, then those pertaining to the state, then those pertaining to the United States, and finally those pertaining to the world, both in natural history and technology. I believe we should not confine ourselves solely to local collections."

The next topic for discussion was introduced by President Ward:

TIME AND COST ACCOUNTING FOR MUSEUMS

President Ward.—"The cause of my query is this. I am called upon to place valuations on all our exhibits for purposes of inventory and insurance. A part of my duty, when we finish a group of mammals or birds, is to put a valuation thereon. Of course my experience allows me to guess on some of these things fairly accurately, but it is not a satisfactory method. Some time ago one of the committees decided that it would be beneficial to have a system of time accounting; that is, in the different departments where work was done, the employee at the end of each day would jot down how much time was spent on this subject, and how much on another, so that in the end you could take any group, and with a fair degree of accuracy know how much time had been spent on it by different individuals, and you could also readily estimate the materials that had gone into it.

"There was also criticism made that certain individuals arrived at the museum repeatedly late, and frequently stretched their luncheon hour longer than the one and one-half hours allowed them; so this series of time sheets was supposed to show how many hours each day the individuals work. The sheets were put into effect, and immediately there was strong protest that the whole thing was debasing; it was commercializing; it was coercing employees; it was not a proper attitude at all; the question whether the mounting of a rhinoceros took one month or two and one-half months was immaterial, the only important question being how good it was when finished; and the man who had two or three letters after his name should not in any case or manner be called to account as to whether he gave the Museum the requisite time that the city paid for and had contracted with him for, or not. The board therefore rescinded the whole action, but it is not satisfied; it is even considering putting in time clocks and making every one turn his little key as he would in a factory. What I should like to draw out is discussion regarding the practice that has been found satisfactory in other museums."

Dr. W. P. Wilson (The Philadelphia Museums).—"I can say a word on that question. I put in a time clock in my museum. I put my own name on the list and turned the key every time I came in and went out. I have a corps of about twelve storehouse men who got together and said they would never use that clock. I made up my mind immediately that they would use it or I would discharge every one of them. I said nothing about it the first day, and they went out at noon and used the clock, but there was a general feeling that they were being subjected to an injustice. Previously I had assigned a man to sit at the door and take a record of everybody that came in and went out, and to enter the time on a card. We had about seventy-five employees, and the time of each was taken. Every month, when they drew their pay, I had to swear that the time card was correct. I thought I would be more accurate by putting in the time clock. The next day I talked to them, and enumerated about fifteen or twenty of the largest newspapers in the country which do the same thing, and some of the largest banks that do it; the Treasury and other leading departments in Washington have been doing it for many years. I asked my men if they preferred to have an attendant take the record when they came in, or to do it themselves on their own responsibility. I made up my mind that if they did not accept the situation, they would be out of the institution. I do not know that I have ever had any substitution, as sometimes does happen in such cases. Where an employee is frequently late it can soon be found out. In several institutions with which I have been connected, I have known splendid men who have lost their positions for not attending to business."

Mr. F. L. Lewton (United States National Museum).—"Reference has been made to places in Washington. I know that many of the departments have somebody at the door taking the names of employees and the time that they come in. But in the Agricultural Department, the scheme depends upon the kind of work that is done. It would be perfectly right and proper to hold a laborer or book-keeper down to definite hours; but it is different with a man doing brain work; he could not be held to fixed hours for he may do his best work at home, at night."

President Ward.—"In Milwaukee there is a very socialistic administration which constantly brings up this feature. For instance, a man being paid a salary of less than \$100 per month sees another man paid considerably more than that. He knows no reason why the man who is getting more money should not give as many hours of service

as he does, provided the rules of the institution require it. We do not require curators to work the same number of hours as the others, but a man naturally figures that one who is getting more pay than he should do at least as much work. It is true that the character of the work differs, but he does not appreciate this. If he sees that there is a discrepancy he immediately begins to feel that there is an abuse, that he should not, for his small wage, be compelled to do more than the other man who is more highly paid; and I don't know but that he is nearly right."

Dr. Wilson.—"In our museum we have two classifications. Workers of one class do only the work assigned to them, and when the hour is up they drop it and go out. But the real museum workers, who are putting up collections and doing the essential work of the museum, are not required to account for their time. If they are not there I know they are doing something in the interest of the museum. Of course I have a number of foreign persons who look at the thing in a different light. They are the ones who struck when the system was instituted."

Dr. Frederic A. Lucas (American Museum, New York).—"I think it is quite as important that the head of the department be on time. I know that if the head of the department is deficient the whole department is demoralized; those under him feel that if he does not keep his hours strictly there is no reason why they should keep their hours. It is a socialistic feeling. I have no patience with the man who is repeatedly late. We have recently lost a very good man on this account, and I saw him go with little regret. In twenty-one days he was on time only twice. I do not consider that kind of man conscientious. But I do not believe in tying a man down. If he wants to get away half an hour or half a day, I do not mind it, but when he is repeatedly late there is no excuse."

Mr. Benjamin Ives Gilman (Museum of Fine Arts, Boston).—"It seems to me that there are two ways of managing men; one is by pacific methods, and the other by domineering. I believe that if a man knows how to do things you will get the best results by letting him alone. But if you drive him and tell him that he must come and go at such and such a time, he will rebel and very little will be accomplished. If he does not do his work properly and attend strictly to his business, let him shift; but do not drive him, if you wish to avoid trouble."

In response to questions from the Chair, it was stated that in the Carnegie Museum in Pittsburgh, and in the Field Museum in Chicago, time clocks are used for the guards and janitors only.

The meeting then adjourned.

SESSION OF THURSDAY, JUNE 5

Morning

The meeting was called to order at ten o'clock at the Academy of Fine Arts.

Dr. A. R. Crook, curator of the State Museum of Natural History, Springfield, Illinois, then presented the following paper:

NEEDLESS REGULATIONS IN MUSEUMS

One who lives within hearing distance of a state legislature, where a thousand or two of bills are introduced at one session, and who allows his thought to go out to the forty-seven other states in which so many bills are introduced that their total amounts to fifty or more thousand every two years, cannot but be strongly impressed with the tendency of man to lay down rules for others to obey. He realizes that the making of regulations is a fundamental characteristic of mankind. If he continues his investigation on this line he becomes convinced that no sooner does the average human being come into a position of authority than he at once begins to make rules for the guidance of other people, lying awake o' nights if necessary to see if he may not advance some new regulations to curtail the natural liberty of his fellows. Many of these regulations are useful and reasonable but far too many are needless or foolish. The only way in which the public may be relieved from many irksome and valueless restrictions is by protest and continued opposition. But "Heaven is high and Allah is far away" and the changing of regulations once inaugurated is expensive of time and effort. Much better were it that there were many regulations too few rather than an excess, however slight.

May not museum men be subject to this failing of wanting to make regulations and may not many of their regulations be needless or worse? If so, are they capable of recognizing this fact and of avoiding the offense? It is well known that many managers of libraries the country over have erred in this respect; formerly much more than now.

So numerous were restrictions in many libraries a few years ago, that the availability and usefulness of those institutions were much less than they are today. Hours were limited, access to shelves was not permitted, the choosing of books was difficult because of inaccessible records, and but few books could be obtained at one time. Great advance has been made in libraries in this regard.

So the usefulness of many museums is decreased today by needless regulations. Take the regulations in regard to days and hours of opening. How often as tourists have we planned to visit a renowned museum only to find it was closed, ostensibly for cleaning, on the only day when it was possible for us to visit it. This is more common in European museums than in those of the United States. In many places in this country the hours during which the institutions are open are often few in number. The museum may contain objects which the tourist has for years looked forward to seeing or which he may in after life greatly regret not having seen. The majority of men rarely have opportunity for extensive travel and when the chance does come to any man, those in charge of the world's treasures in art and science should not erect barriers to that man's chance of enjoying those treasures by needlessly limiting the hours during which they may be seen. A distinguished faunal naturalist week before last endeavored to visit the Chicago Academy of Sciences and Zoological Gardens, but arrived ten minutes after closing time. Being no longer President of the United States, he did not gain admission, but fared as does the ordinary citizen in such instances. To the common citizen it often seems that the museum is maintained for the staff or for the collections rather than for the public. Limited hours and days of visitation there must be, but those in authority should never lose sight of the fact that the greatest possible liberality should prevail. At the Illinois State Museum of Natural History the hours are from nine to five with an intermission at noon, but visitors are admitted any time after half past seven in the morning, even though cleaning may be going on. An attempt is made to see that the museum is not for idlers alone as Mr. Smith said last night. The curator has given addresses at a watch factory, a shoe factory, at the laundries, etc., on natural history subjects and extended an invitation to the workers to visit the museum in a body in the evening. They have come a hundred at a time and have been conducted around. Why not make the museum as accessible as a dry goods store?

Very commonly an admittance fee is charged in museums. But

where it is possible to raise funds in any other way for conducting such institutions, it is desirable that admittance be free. The average man is so busy earning money for food, raiment, and shelter, that he has little left for the finer things, those things which contribute to his education and help make him a better citizen. For this reason free schools, free libraries, and free museums are greatly to be desired in every community.

Needless, it seems to me, is it to have signs like those seen in many museums, even Philadelphia's interesting collections, such as these: "Do not lean on the glass," "Do not touch the objects," "Do not sit on the chairs," and a multitude of other "do nots." If these signs seem to be necessary it is the fault of the museum authorities and not of the visitors. Action, not regulations, is what is wanted. If visitors sit on exhibition chairs or lean on glass it is because they need chairs upon which they may sit and railings upon which they may lean. Do not make a rule against a desirable action. Make the action unnecessary.

To my mind no better example of a needless regulation may be found than that forbidding visitors to take photographs in museums. Multitudes of tourists most thoroughly enjoy photographs which they themselves take, even though their pictures may be inferior in workmanship to those which may be purchased on a postal card. Their interest in the picture is founded on the personal element. We do not begrudge the mental pictures which they carry away nor should we object to their taking a film on which the object has been recorded to show to admiring friends during travelogues. The object photographed becomes no smaller because the camera has been pointed at it, but the mental image of the visitor is greatly increased in distinctness and the value of the museum's educational power has grown many fold because of that act.

On a trip of twenty-two thousand miles through many countries the writer kept a daily journal. Near the close of the trip the journal was lost. Fortunately he had taken about four hundred photographs and kept accurate record of the time, place, and circumstances of the exposures. When the films were developed, he was able to account for each day of the journey. So on a tour through museums, the visitor should be permitted to photograph the objects that catch his attention so as to obtain a record which increases many times the value of his journey and enables him to become more familiar as the years go by with the subjects that he has seen.

The general attitude of those in charge of museums should be to make the treasures in their keeping as accessible in all regards as is consistent with their preservation. That attitude would furnish the answer to many a question of supervision where the details might obscure the main issue.

Dr. Frederic A. Lucas, director of the American Museum of Natural History, New York, then presented the following paper:

THE FUNCTIONS OF MUSEUMS: THE QUESTION OF TEMPORARY EXHIBITIONS

Among the gifts most liberally bestowed upon museums is advice as to what they should do for the public, the amount of this advice being usually in an inverse ratio to the experience of the giver thereof, and its value in an inverse ratio to the amount.

Perhaps the piece of advice most often showered upon museum officers is to the effect that museums should be up to date, and by means of special exhibits or exhibitions illustrate such recent discoveries or important events as may be readily shown by means of objects. (I often wonder if those who give this advice realize what it calls for in the way of space, work, and money!)

The adviser is apt to make invidious comparisons between the museum and the library—in favor of the latter—totally forgetting the difference between the two, not only in the manner in which they are compelled to deal with facts, but the relative cost of doing it.

To begin with, few museums are fortunate enough to possess a room where temporary exhibits may be placed, while almost every library, no matter how small, has a shelf and bulletin board for the display of books, prints, and maps.

Take such concrete and familiar examples as the eruption of Vesuvius or Mt. Pelée: within an hour a library can assemble all available books and illustrations bearing on such a topic, and place with these new matter as fast as issued. The museum can do little more save to add to such an exhibit examples of ash, lava, and similar volcanic products it may chance to possess. If it has a relief map of the region, so much the better, but to make a relief map requires months of labor and the expenditure of large sums of money, usually more than is to be had. This in spite of the fact that last year we were assured that

the museum does not need money for what it is doing. To construct a map showing changes that have taken place as the result of an eruption calls for a special expedition, the services of a skilled modeler, the expenditure of much time and very considerable sums of money.

It costs little to move books and pictures; it is an expensive amusement to build cases, create or collect exhibits and install and label them. We will all agree that such exhibits are desirable, we all know that just such exhibits, of greater or less extent, *are* made by all museums; vital questions are to what extent should they be made, should museums participate in exhibits not strictly germane to their own work, and what, in the long run, is their effect on the museum?

The special exhibit may be looked upon in the nature of an advertisement, calling attention to the museum and its work and proclaiming it to be an up-to-date educational institution. But I doubt much the utility of temporary exhibits, no matter how interesting, not directly in line with the regular work of the museum. After all, as in business, the best advertisement is a satisfied customer. Do such temporary exhibits, as a rule, pay? Does the permanent gain warrant the outlay of time and money needed to make such an exhibition successful?

Frankly, I believe that as a rule they do not, that the advertising does not call attention so much to the institution as to the exhibit and that, this removed, the institution is forgotten. I have seen some large, and, so far as attendance went, remarkably successful exhibitions where the number of visitors ran up into many thousands. But I have been unable by any study of museum statistics to see where there was any lasting gain. As just intimated, the withdrawal of the exhibits was followed by a cessation of attendance, and this frequently dropped below the normal.

The tuberculosis exhibit at the American Museum of Natural History was, from point of numbers, wonderfully successful, the Hudson-Fulton Celebration drew many visitors to the great museums of New York and for this reason is of particular interest, because by noting the attendance, it is possible to get a fairly correct idea of its effect in attracting visitors and of the extent to which the attendance was permanently increased.

Now, in the cases cited, the year following the successful exhibit witnessed a marked decline in attendance, and in the case of the Hudson-Fulton exhibition this was felt by all museums and similar institutions in New York City.¹

¹ With the exception of the Childrens' Museum, Brooklyn.

I have presented this paper, not merely to express my own views on the subject of temporary exhibits, but to suggest to some of our friends why it is they cannot be held more frequently. Also I should be glad to get an expression of opinion from the members present. There are those who think that a museum should, to a great extent, be a continuous exposition of contemporary events and discoveries and I would ask these to consider what this means not only in time and money, but in its effect on the museum.

Those who not merely request but demand that "a museum should actively and frankly place itself at the service of the public without being asked" forget that education of the public, important though this may be, is not the sole object of a museum. An equally important, perhaps at present even the most important of all functions, is the preservation of objects and information. In these days when not only animal life, but human beliefs and customs, are being swept away with all the swiftness borrowed of steam and electricity, it is well that there are institutions whose mission it is to preserve for future ages something that will give a little idea of the world of today. A museum, like a library, is not only concerned in distributing information, it must have that information to distribute.

We were informed last year that the museums of this country had, for the period just passed, the immense sum of \$25,000,000 for extensions and researches and that probably a lordly share of the \$25,000,000 went straight to art and science and that the user of museums received comparatively little. Did the speaker for a moment consider that this \$25,000,000 was distributed throughout the length and breadth of this country, or that the budget for the schools of New York alone was \$35,000,000!

The charge that probably a lordly share of the above sum went straight to art and science is a little vague: if, as seems probable, the speaker meant that it went for the purchase of specimens, for the dispatch of expeditions, for the prosecution of research, it is difficult to see how it could have been expended to better advantage; these are all important functions of museums and without them there would be nothing to offer "the user of museums."

No one, I believe, recognizes more fully than does the speaker the duty of the museum towards the public, no one recognizes more fully than he its educational possibilities, but no one feels more strongly than he that the policy of a museum must be shaped and guided from within by those who know the conditions and have carefully studied

the situation rather than directed from without by those who have no facts to interfere with their theories.

It must be borne in mind that each museum has its own special problems, dependent on its contents, its resources, its location, and its general class of visitors; what may be feasible and desirable for one institution may be quite impracticable for another.

And, there is a decided difference between the museum of art and the museum of science in the matter of the desirability of temporary displays and the facility with which they can be made.

The art museum is, in this respect, more like the library; it deals as a general proposition with smaller objects and fewer of them, objects that are readily cared for and do not require long weeks or months of preparation to render them available for exhibition.

Since I have been unable properly to include some of my ideas and observations in the body of this paper, I will present them in the form of a sort of epilogue.

It is usually thought that the large museum is much better able than its smaller relatives to indulge in special exhibitions and that it can do so with little disturbance to its regular work. But, paradoxical as it may seem to many, I believe that the larger the museum, the less can it afford to indulge in temporary exhibitions. In a large institution the establishment of a new department, the installation of a temporary exhibition—no matter how interesting—means the unavoidable diversion of time and money from other work. The small museum appeals more directly to its constituents than does the large institution and I feel inclined to say that the local work and influence of a museum are in an inverse ratio to its size. The large museum provides the greater facilities for the student; the small one deals more directly with the education of the general public whose members can more readily meet the officers of the institution. Also the number of visitors to a museum does not increase in proportion to its size and importance.

I should like to see the experiment tried in some large city of a series of small museums under one administration, the study or reserve collections being in one large central institution, the branches being devoted entirely to exhibition and public instruction. To a certain extent this is here and there being brought about by force of circumstances, as in London, where the Victoria and Albert Museum controls the Bethnal Green Museum and has, by division, given rise to the Science and Art Museum.

Mr. Edward L. Morris, curator of natural science in the Museum of the Brooklyn Institute of Arts and Sciences, then presented the following paper:

THE MUSEUM POINT OF VIEW IN BOTANY

In looking about many museums I have been surprised to find a very great lack of plants. The most noticeable thing in the botanical collections, particularly in the exhibition material, is the accumulation of odd botanical pieces, which is probably due solely to circumstances, either the result of special interests on the part of officers or donors, or to the acceptance of some general collection of natural history curios, in which may be included pieces of wood, purporting to be from the Mount of Olives, in the form of ink-stands or paper-weights, etc. The labels are often faded from the use of very poor ink. There may be row upon row of bottles of different grades of seeds, or drug products so badly eaten by insect pests, that I am afraid the insects themselves would not recognize their own work if they came for a second visit. There is commonly no plan to these exhibits, and no attempt to show to the public that botany is after all a subject. I recognize that the presence of a specialist in drugs and in drug products on the corps of a certain museum would naturally be of great benefit in securing fine material in the department of drugs. I recognize that a specialist in systematic botany would be the natural medium through which would be collected, if he had local interest, a fine series of local flora. I recognize that a doctor or practicing physician may be a good honorary curator of plants or botany in the local museum. But it seems to me that something is wrong if such conditions represent our museum point of view in the great subject of botany. The agricultural college has its own point of view; the Department of Agriculture in Washington has a much broader one. In contrast to these, the College of Pharmacy of the City of New York has its own narrow point of view. We do not expect in such cases that there will be any great breadth or completeness of treatment of the various phases of botany as a great subject. It is the province of the general museum to exhibit for the public a series of objects so arranged, so chosen, and related to each other that the sightseer, in going through and reading the larger labels, and, if he has time, some of the "middle size" labels, or if he has sufficient leisure and greater interest to read the individual labels and look over

the material, will go away with the idea that botany is a subject which touches man at every point in life. It touches the commerce of the world; it touches the question of the local health department. I might go on and cite more than a hundred interests, which you and I unconsciously enter into each day, with which botany has an important relation.

I wish to emphasize the museum point of view in contrast to that of a botanical garden. In the botanical garden certain atmospheric and soil conditions are produced, or are taken advantage of, as the case may be, in growing plants. A convenient pool or tank, or even a stream, out of doors may suffice for illustrating very many of the aquatic plants; but I have yet to find a botanical garden that had money enough, space enough, and men enough to do things on such a scale as to show out of doors the kind of thing that can be done in a few museum cases. To illustrate: Where have you found in a botanical garden in America a series of specimens illustrating the peculiar African flora? Where have you found a botanical garden or museum in America (I am speaking about the museum as it should be, for there is no museum here that has all of these things) that will show you, in a group easily comprehended, the world distribution of some of the important species of plants that are most in demand by human beings? Where will you find an institution in which the poisonous or otherwise dangerous plants are fully exhibited? I feel that the science of botany has been very much belittled by the attention that has been given to it so far on the part of museum people. The museum point of view, if it is going to be a broad one and meet the needs of the public, must include a plan for showing all the biological principles in plant life, and just as many of the subsidiary branches involved in these principles as time, money, and men will allow. This plan should include something of the local flora, and of the flora of the state and of the continent, with exhibits showing the relationship of that flora to the other continents of the same hemisphere, and, in contrast, the very small relationship to the flora of the other hemisphere. They should be very carefully illustrated so as to call attention to the characteristic things that exist in Africa, Australia, and Asia, in contrast with those of America, which we know so much more thoroughly. It should include an exhibition of material to show that the vegetation on the surface of the earth is being studied and treated scientifically. Along with the illustration of such fundamental vegetable material should be shown a representation of plants which

have had most to do with the support of animal life, plants that are injurious, economically important, decorative, etc. There should be a very clear illustration of what we mean by plant ecology. The botanical garden may have a sphagnum bog, but it can be visited profitably only between May and September. Shall we idle away the intervening time or shall we go to the museum and study the ecological groups which in time will be found there?

In the museum there is something permanent, something always to view. It seems to me that if we can develop our interests in plant life, and adopt some plan for a comprehensive botanical exhibit, we shall find that we are answering a request that the public is making, in some cases by actual word of mouth, and in other cases by the letters which we receive asking whether we can show certain phases of plant life. The things which we put in the museum exhibition cases which appeal to school teachers, and thence become a point of interest with the pupil, sooner or later become a point of interest with the people outside of the school. Children will talk about the things which they are interested in. There are more children than grown-up pupils who go away and talk about the museum. As we grow older we learn to become silent; we keep our interests more or less to ourselves. It is unfortunate that we do not remain child-like in that regard, and talk about the things in which we are interested. We have a false idea that talking shop is discourteous to our neighbor; and yet if you will stop and analyze your experience for a moment you will find that after all some of the most interesting conversations which you remember have been those in which you learned something of the interests of the other person, either interests peculiarly theirs or those which touch your own. As museum people, we are not advertising our own museum activities in our own neighborhood. So I am making the plea that at least a botanical exhibition should be planned, with the idea of appealing first to the teacher, then through the teacher to the pupil, and then through the talkativeness of the children to the other people. If we have this plan, which gives a rounded view of plant life and activities, we shall have established something which has been the object sought for a great many years by those who have given serious thought to the question.

Mr. Harlan I. Smith (Museum of the Geological Survey, Ottawa).—
"Mr. Morris' reference to advertising seems to me a particularly happy one. I know that the very word advertising is disliked by some mu-

seum men, but now-a-days there are museums and even universities which subsidize a press agent. Many people will never know what museums have to offer if not told. Business men find advertising of great importance and conduct educational campaigns to teach the public about their interests. Cities maintain publicity bureaus. Those which do not do so lose in competition with the others. One firm not only spent thousands of dollars per month but employed a man at a high salary who had been a Sunday editor on a New York paper, and a governor of a province. I believe they are still doing this. It shows how business people consider the work of carrying educational news to the public. In some matters it may be well for those of us who do our educational work by means of the museum method, to consider carefully what business men have tested. I can see no harm in museum advertising, publicity, and press-agent work if no untruths are given out. The press may garble the matter, but if we give out the truth many times it is not likely that the whole truth will be garbled, or that the same truth will be garbled each time, so that eventually the public will get the whole truth while the garbled matter will be short-lived. It must be remembered that the press is organized to distribute the truth to more people than museums can easily reach. All of this that they do for museums gives just that much service without the expense of paper, printing, addressing, and postage. In other words, if properly handled the press may do part of our work free of all expense to us."

President Ward.—"I feel with Mr. Smith that some men are characterized by too shrinking a modesty. For instance, there appeared in one of the newspapers this morning the following headline, "Museum people all oppose museum extension." (*Laughter.*)

The following paper by Mr. Antonio Miranda, artist in the Museum of the Brooklyn Institute of Arts and Sciences, was then read, in the absence of the author, by Mr. E. L. Morris:

A METHOD OF CASTING, MOLDING, AND COLORING FUNGI AND OTHER NATURAL HISTORY OBJECTS

It is recognized that the following details may be interesting to few museum curators, but so many inquiries have been made as to the methods used in preparing our exhibited material that it seems

best to place on record the steps we have found successful. Knack is necessary, as in any other mechanical process.

FUNGI

1. *To Make the Mold.* First turn the mushroom upside down, then cut off the stem close to the juncture with the top and lay it aside for molding. The top is surrounded at the outer edge by a roll of clay forming a margin for the lower surface of the top. Upon this is poured the plaster. The consistency of the plaster is one of the most important points. It must be thin. The plaster is then allowed to set. As soon as the mold is set the whole thing is turned over, the clay removed and plaster poured over the top to produce the dorsal mold. When this in turn has set the two sides are separated. The upper side usually comes out very easily, but the under side usually carries many of the gills with it.

To Clean the Mold. It is placed in water and boiled until the gills become soft and drop out or will wash out under running water. The stem is then molded in the ordinary way.

2. *To Cast in Wax.* In preparing the wax, balsam is added in the proportion of a teaspoonful of balsam to one pound of wax. The mold of the gill-bearing surface is then treated to a thin covering of wax, allowing it quickly to fill every groove. This is then covered with cheesecloth or other fine fabric. Another layer of wax is then poured rapidly. When all the wax has set, but while it is still warm, the whole is lifted by the edges of the cheesecloth from the mold and the cast of the gill-bearing surface is then complete. The same process is followed for the upper surface of the mushroom. The cast of the stem is made by pouring wax in the mold, but always about a wire through the center. The wire is left extended at each end for purposes of attachment.

3. *To Mount.* Both casts are heated slightly and joined at the edge. The stem is mounted last and all lines of union are modeled freehand to continue the character of cast surface in the natural relation to the upper and lower surfaces and to the lower surface and the summit of stem. If a veil is to be added to the stem or to the edge of the pileus this must be modeled freehand and attached to meet the necessity of copying nature.

4. *To Color.* The best way to color is to mix tube oil colors with the wax before casting. Additional colors and shading and pattern must be applied with the brush when the cast is completed.

LEAVES AND FLOWERS

To mold leaves and flowers the ordinary well-known methods are to be followed except that the principal point is to keep the leaf in its natural shape by building up the clay to the leaf or to the flower. The majority of makers have usually cast the parts as flat as possible, thereby spoiling the natural contours and surfaces by flattening on the clay and then re-shaping by hand after the cast was finished. A certain amount of shaping and manipulation is possible, but always to some detriment in the naturalness of the result.

REPTILES

The next most critical sort of museum material is the group of reptiles. The main difficulty in satisfactory casts of reptiles is in the patterns and shading of color. It is a laborious process to copy free-hand a faded pattern from the alcoholic or otherwise preserved specimen or to copy offhand a pattern record in a photograph. To make sure of the pattern and shades it is better to outline on the specimen with a thin mixture of lamp black and turpentine. Then the plaster mold is prepared in the usual way. Upon this is immediately obtained the character shading. When set and dry, the pattern is again drawn, this time on the mold, with the same preparation, and the cast, either in wax or plaster, poured in the mold in the usual way. When removed from the mold the cast carries a replica of the pattern and surface shadings of the original specimen as the actual guide in final coloration.

President Ward.—"I think Mr. Miranda's work of this character is the very best we have had and I feel that it is an important communication to museum technique."

The following paper by Dr. Wallace W. Atwood, of the Chicago Academy of Sciences, was then read, in the absence of the author, by Dr. Oliver C. Farrington:



NORTH VIEW OF CELESTIAL SPHERE AS INSTALLED IN THE ACADEMY MUSEUM.

THE ATWOOD CELESTIAL SPHERE AT THE CHICAGO ACADEMY OF SCIENCES

As one looks out at night upon a clear sky the impression gained is of a hemispherical dome of almost infinite size, studded with stars. The celestial sphere is an apparatus giving a miniature reproduction of this surface which we call the sky and in which the stars are commonly imagined to be placed. Necessarily the celestial sphere is of almost microscopic size as compared with the universe, and if the earth were represented in proportion it would be a tiny ball located exactly in the center of the sphere. The observer would be a correspondingly small being, located on this tiny ball.

The earth is so large as compared with a man that, as he stands on its surface, it looks flat to him. He can only see one half of the heavens at one time—the half which lies above the plane bounded by the horizon. In the celestial sphere there is an horizon table surrounding the observer and extending out almost to the sphere. The rim of the horizon table is horizontal and is in the same plane as the center of the sphere. A complete hemispherical dome is therefore exposed to the view of the observer and the other hemisphere is obscured from view by the horizon table and the observer's platform.

As the earth turns upon its axis, the sun, moon, and stars appear above the horizon at the east, pass overhead and sink from view at the west, and the sky seems to be moving instead of the earth. It is as though the universe were rotating about the earth's axis. So, in this apparatus, the sphere is mounted to rotate about the miniature earth, which we have imagined as being placed exactly in the center of the sphere. Thus the sun, moon, and stars appear at the east and pass overhead, following paths precisely similar to those of the real stars in the real sky.

There are certain parts of the heavens which are never visible to us at Chicago. Since we are north of the equator we can at no time see the stars in the south polar region. If one were to stand in a level field near Chicago and look straight south, just above the horizon, his line of vision would pass as close to the south pole as is possible from this latitude. And, if he were to continue to look along this line for twenty-four hours, as the earth turned this line of vision would describe a circle on the imaginary spherical surface called the sky. This circle would enclose that part of the sky which is never visible to an observer at Chicago. In constructing the celestial

sphere, that part of the spherical shell coming within this circle was omitted, thus leaving an opening for the entrance of observers and for supporting trusses for the observer's platform. No part of the opening ever appears above the horizon and the omission of this part of the spherical surface in no way interferes with correct representation of the sky for this latitude. The diameter of this opening subtends an arc of $83^{\circ} 40'$ on the spherical shell, or twice $41^{\circ} 50'$, the latitude of Chicago.

EDUCATIONAL VALUE

Probably every seeing person has sometime looked with wonder and curiosity at the brighter stars in the heavens. Most of them are great suns, thousands of billions of miles away from the earth, at least as bright as our sun, and possibly the centers of systems comparable in size and number of planets with our solar system. The study of these heavenly bodies may in a most wonderful way develop powers of imagination, give to the student of astronomy some conception of the magnificent distances between the heavenly bodies, train the powers of accurate observation and exact reasoning, and, above all, lead one to some appreciation of the wonderful symmetry and the wonderful examples of growth or evolution in the universe in which we live.

The earliest intelligent people who lived on the earth studied the stars, and from this study learned some of the fundamental facts about the shape and size of the earth. The shepherds of ancient Greece, while out on the hills with their flocks more than three thousand years ago, became familiar with many of the great groups of stars and gave those groups names which are yet in use. Thus: Ursa Major, the great bear; Ursa Minor, the little bear; Canis Major, the great dog; Taurus, the bull; Orion; the Pleides; and Cassiopeia are names of some of the great constellations with which everyone should become familiar. During the last three thousand years, the study of astronomy has so increased that today no child's education should be considered broad or complete until he has become familiar with the main facts about the universe in which the earth is a part.

The Chicago Academy of Sciences has appreciated the increasing interest in the stars and the difficulty which every one meets in trying to become familiar with even the brighter stars and the more commonly known constellations. Various plans for promoting this study were considered by the Academy. The flat star charts are confusing



INSTRUCTOR WITH A SMALL GROUP OF CHILDREN WITHIN SPHERE.
FLASHLIGHT PICTURE.

to the untrained observer, and the globes, on the outside of which stars are sometimes represented, are unsatisfactory.

Through the use of the celestial sphere, it is possible to become familiar with all the constellations that are ever visible in the latitude of Chicago. Few people have had the opportunity of seeing all of these constellations, for on a given evening it is possible to see but a few of them and the apparent motion is so slow that it would take hours and hours of careful watching to see all of those visible on a single perfectly clear night.

The stars of the first, second, third, fourth, and a selected number of those of the fifth magnitude visible from the latitude of Chicago are represented in the sphere, and the total number is six hundred and ninety-two. In addition to the fixed stars, four planets, Venus, Mars, Jupiter, and Saturn are represented, as well as the sun and the moon. The celestial equator is clearly marked in the interior of the sphere, and the ecliptic, or apparent yearly path of the sun among the stars, is also shown.

Many of the mathematical conceptions necessary for the study of descriptive astronomy and often discouraging to the beginner, are made perfectly simple with this sphere. There is now no reason why anyone, including the younger school children, cannot become familiar with the chief constellations and their apparent movement, the brighter stars, and the real and apparent movements of the sun, moon, and planets. Many of the fundamental ideas in mathematical geography necessary in elementary education are also easily demonstrated with the sphere.

This apparatus should therefore prove of great practical value in the educational work of the Academy. The public and private school children should make frequent visits to the sphere, and the students in astronomy in the neighboring universities will find it well worth their time to arrange excursions with their instructors to the Academy to make use of this apparatus in their studies.

A GIFT TO THE ACADEMY

The sphere now in the Academy building was invented by Wallace W. Atwood, secretary of the Academy and director of the museum. It was constructed, installed, and presented by Mr. LaVerne W. Noyes, president of the board of trustees, in order to broaden and to promote the educational and scientific work of the Academy.

CONSTRUCTION

The material used in constructing the sphere is very light galvanized sheet-iron, $1/64$ -inch thick, which has been pressed to the proper curvature and soldered to the equatorial ring and to a much smaller ring about the entrance to the sphere. The separate sheets lap sufficiently to be soldered upon one another. The platform and horizon table are of wood and rest upon a very strong steel frame.

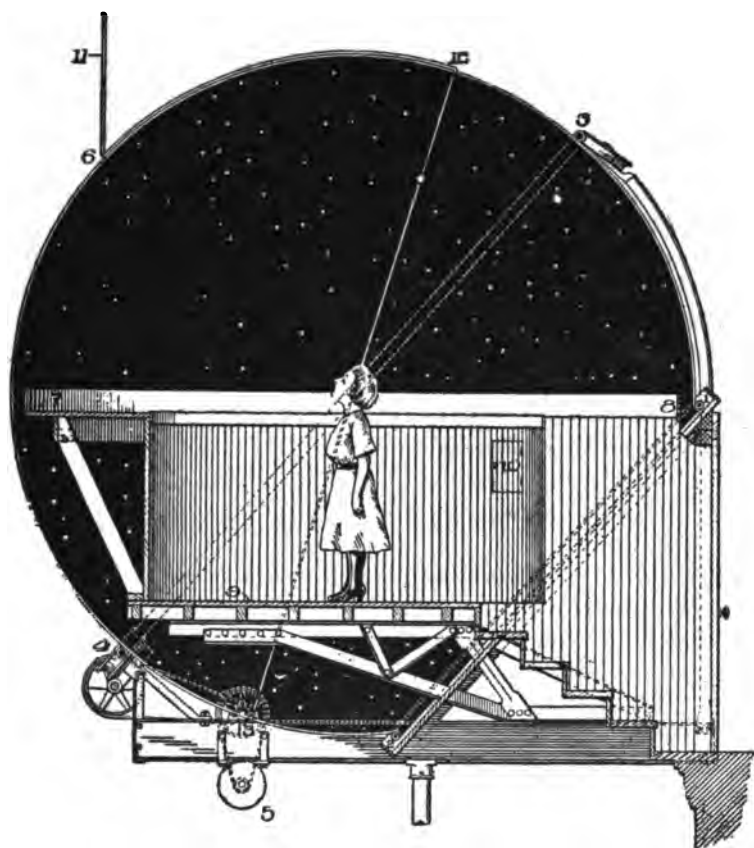
The diameter of the sphere is 15 feet. The weight, exclusive of the platform, is a little more than 500 pounds. This weight is carried by a $2\frac{1}{2}$ inch tube attached to the outside of the sphere along the line of the equator and resting upon three wheels as shown in the cross section view. The two lower wheels carry the greater portion of the weight but the third and upper wheel, above the door, resists a certain thrust due to the inclined position of the sphere. The stationary platform within the sphere is supported in part by steel trusses resting upon the framework of the museum balcony, and in part by two upright pillars which rest upon the great I beam of the main floor of the Museum. This platform carries a circular horizon table, below which the sphere is obscured from view, and above which there is a complete hemisphere on which the stars are represented.

The observer in this sphere is located on the surface of the earth at north latitude $41^{\circ} 50'$. Celestial spheres constructed for localities having different latitudes north or south would be placed at other angles and certain other constellations would be represented. Thus a celestial sphere constructed for Buenos Aires, to represent the southern heavens, would be so placed that the observer would enter from the north polar region and see the southern constellations, not visible at Chicago, observe the courses of sun and moon north of him, but fail to see any of the constellations about the north pole of the heavens as seen from the latitude of Chicago.

Attached to the steel structure supporting the sphere is a small electric motor which propels the two lower wheels supporting the sphere, and their rotation causes the sphere to rotate. The electric power for rotating the sphere and the light for illuminating the interior are controlled from within the sphere. The electric current necessary for representing the sun is received at the north pole at a rotary contact, and carried by an insulated wire to the ecliptic, about which there is a wire on the inside of the sphere.

The Fixed Stars.—The stars are represented by tiny perforations

in the sphere. Perforations of different sizes have been made to represent stars of different magnitudes. The size and location of each star in the sphere has been determined with great care by using



NORTH-SOUTH CROSS SECTION OF SPHERE

- | | |
|---|--|
| 1-2. South Polar Ring at entrance. | 7-8. Horizon Table. |
| 3. Upper Wheel supporting sphere. | 9. Observers' Platform |
| 4. One of two lower wheels which support the sphere and are propelled by motor. | 10. Switch Board. |
| 5. Electric Motor. | 11. Electric Wire. |
| 6. North Pole of the heavens. | 12-13. Ecliptic or apparent path of the Sun. |

an instrument especially constructed for this purpose, so that the sphere is an accurate miniature representation of the heavens.

The Planets.—The shifting positions of the planets Jupiter, Saturn, Mars, and Venus among the constellations have been provided for

by a number of openings made to represent the positions of each of these planets at different times of the year. The openings not in use are very readily covered.

The Sun and Moon.—A small electric light, which may be moved along the ecliptic, represents the sun at different seasons of the year. A series of small discs, coated with a luminous salt, are cut to represent the various phases of the moon. These discs may be moved along the orbit of the moon and thus represent that body in its appropriate phase and in its relative position among the stars.

Each star in the sphere is numbered and by reference to a series of star tables anyone may easily identify a chosen star or through the use of these tables locate any of the brighter stars in any constellation visible from Chicago. Spheres constructed for other latitudes would be placed at different angles and would show certain other constellations.

Mr. Charles R. Toothaker, curator in the Philadelphia Museums, then presented the following paper:

THE DEUTSCHES MUSEUM AT MUNICH

The Deutsches Museum at Munich covers a field of its own. It is not a natural history museum, nor an ethnological museum, nor an art museum, nor a commercial museum, nor yet an historical museum as we ordinarily understand that term. The history, development, and progress of invention are illustrated in this museum, and the exhibits naturally are very largely in the field of mechanics. Discoveries and inventions in the fields of chemistry and electricity are also illustrated.

The exhibits, arranged in systematic order, begin with a series of pulleys and weights arranged upon a wall to explain the correlation of forces, supplemented by apparatus to show the properties of matter, as strength, elasticity, etc. In this part of the museum is an equipment such as might be found in a first-class scientific laboratory in a high school or college. Every article is thoroughly explained by labels which, while free from technical language, make perfectly clear to any visitor the mechanical principle involved. Every model is just as open and as accessible to the museum visitor as it would be to a professor in a school room engaged in demonstrating it before a class of students.

There are levers, wheels, eccentrics, cogs, gears, and other mechanical devices shown by models, all of which are actually operated by the visitors. These models which represent elementary principles are followed by simple machines, and these in turn by more complicated pieces of mechanism, until we find one part of the museum given up to the steam engine, another to the loom, and other sections illustrating other important machines. In the steam engine series there are many models, commencing with the earliest known type and including every important kind of engine. Many of the specimens exhibited are not miniature models but are either replicas or else the actual first engine of a certain type constructed by the inventor. Many of these first engines are thus preserved in the Deutsches Museum.

The astonishing thing about this exhibit is that practically every one of these engines can be turned by any visitor and the labels are so placed that every position of every part of the machine is explained. When a wheel or valve moves a certain distance, a new label is automatically brought into view and the visitor who turns a handle to operate the engine can see at a glance where, how, and why the steam gets in or out of the cylinder, or understand any other part of the working of the engine. Usually a few parts of the machine are cut away so one can see the valve sliding, the piston head moving, and other essential parts which are commonly hidden from view. The crowning feature of the exhibit is an actual modern German locomotive apparently resting on its tracks, but really raised so that its wheels are clear. Part of the cylinder is cut away and other working parts are exposed as much as possible so that the whole internal anatomy of the locomotive can be studied. A boy visiting the Museum is allowed to climb up into the cab, and throw the throttle open. At once the piston works, the valves operate, and the wheels all turn properly. Much of the machinery is operated by handles placed so the visitor can turn them easily. Some of the handles project through the glass of a show case. Some of the machines are moved by power which is turned off or on by an electric button or switch.

The attitude of visitors toward the exhibits is one of the greatest interest to a person coming from a museum in the United States. It seemed to me that there was a desire and an intention to learn on the part of both children and grown people, both poor and rich, seldom if ever found in the average visitor to a museum on this side of the ocean. I saw men and boys carefully pulling the cords while they read attentively the labels explaining the correlation of forces. Still

more surprising to me was the almost entire absence of the destructive inclination. Where in the United States would it be possible to place a loom with no case over it in the middle of an exhibit room and allow any visitor to throw the shuttle and weave cotton? Yet this very thing is done in the Deutsches Museum in Munich. I understand that the watchman in this section had worked in a mill and could mend the warp threads when one was occasionally broken by accident.

Many of the exhibits in the Deutsches Museum are of such interest that other museums might wish to copy after them. There is, for example, an exhibit showing the history of lighting, commencing with primitive lamps of clay and metal and continuing up to improved electric lamps such as the mercury vapor arc. I know many museums where the early part of this series would be highly prized.

The basement of the building contains an excellent coal mine with tunnels and passages through which visitors walk for a long distance. What interested me most, however, was the clear demonstration that it is perfectly possible to exhibit machinery in motion. This is a point of great value in the commercial museum, where so many industrial processes are almost incomprehensible without the machine which does the work, and the machine tells its story best when it is seen in action. I am now strongly of the opinion that many of the models shown in museums could be made to show motion and that they ought to be so arranged if in moving they would teach better the lesson for which they are intended.

Please do not understand me to advocate that we put machinery in motion simply "to have the wheels go round," but I know that no visitor who comes to The Philadelphia Commercial Museum and simply sees the cotton gin standing still understands the machine and how it does its work half as well as the visitor who sees it in action. Therefore we have an electric motor attached to our cotton gin and when the current is turned on you may actually see the saws tearing the fibers from the seeds.

It is, of course, necessary always to consider the character of the visitors to each museum in order to determine how much we may leave our exhibits uncovered and how much we may trust the visitors to set the mechanism going. I remember that Dr. Farrington, of the Field Museum in Chicago, once showed us a practical device for covering up a mineral which would be affected by light, so arranged that any visitor could safely uncover it by pressing a button. It

really seems as though an adaptation of this might be applied to any desired motion which it is wished to put into a show case. Even in museums having no machinery to exhibit, it may be desirable to have some contrivance under the control of a visitor, perhaps to turn over a rare coin, thus exhibiting both sides of it, or to turn a specimen of any kind on a pivot.

I do not see how anyone can visit the Deutsches Museum and fail to be impressed with the thought that it is possible to contrive ways in which the museum visitor can come into closer touch and acquaintance with the specimens shown in all our museums.

Professor William C. Mills, curator and librarian of the Ohio State Archaeological and Historical Society, presented a paper entitled: "Legislation in the Interest of the Ohio State Museum."

The Chair then appointed Messrs. Hollick, Lucas and Gilman as a committee to draft resolutions.

The following communication from Dr. George Frederick Kunz, honorary curator of gems in the American Museum of Natural History, New York, was then presented for the consideration of the Association:

THE DESIRABILITY OF A MUSEUM EXHIBIT AT THE PANAMA EXHIBITION

As the American Association of Museums consists of so many members, residing in so many different states, and as a great international exhibition will open in 1915, at which there will be visitors from all parts of the world, it would seem most appropriate that this Association should take steps to participate in the coming San Francisco Panama Exposition.

It would seem a wise plan to secure a sufficient amount of space in the social economies building for the exhibition of photographs of museums, installation, cases, statistics, and everything related to the management of museums. Members of the museums could be in attendance from time to time, so as to furnish information to the many people whom the exhibition would attract, and collections of material could be made, to be eventually deposited in some prominent museum such as the American Museum of Natural History, in New York, or the National Museum in Washington. A collection of reports and

pamphlets on museums could also be made and could form a separate library for the use of people interested in museums, and much useful and practical instruction could be gained from them that would be of distinct help in the establishment of such an institution anywhere.

To show the world what the members of this Association and the museums with which they are connected are doing, and what they are projecting, it is suggested that the president be authorized to appoint a committee of five of the members, making with the president and secretary seven members in all, to initiate and perfect the necessary arrangements for the proposed exhibition.

The proposition advocated by Dr. Kunz was the subject of extended discussion. It was the sense of the meeting that a mere exhibit of photographs and other minor illustrations of the work of American museums would be inadequate, and that an effective exhibit could be made only by securing the coöperation of a considerable number of museums which should combine to present a general exhibit or series of exhibits illustrating their buildings, organization, and methods of installation. To organize such an exhibit would require a large amount of work and a considerable expenditure of money. The funds of the Association are insufficient for this purpose, but it was thought a fund might be secured from other sources. A committee was finally appointed, consisting of Messrs. Kunz, Farrington, and Wilson to consider the whole subject of museum exhibits at the Exposition and to report to the Council any recommendations which they consider advisable. It was understood that this committee should not incur any expense to the Association, but President Ward offered to have the report mimeographed and distributed to the members when it had been prepared. Dr. Lucas offered to print any questionnaire that the committee desired to send to the members before making its final report.

The report of the committee on resolutions was then presented by the chairman, Dr. Arthur Hollick, as follows:

Resolved, That the thanks of the Association be tendered to the trustees and officers of the Academy of Natural Sciences of Philadelphia, The Philadelphia Museums, Museum of the University of Pennsylvania, Wistar Institute of Anatomy, Pennsylvania Museum and School of Industrial Art, Zoological Society of Philadelphia, Wagner Free Institute of Science, and the Masonic Temple, and

especially to Dr. W. P. Wilson, Dr. Edwin Atlee Barber, Mr. Witmer Stone, and Mr. Stewardson Brown for the cordial welcome and thoughtful arrangements which have made the present meeting so enjoyable and fruitful an occasion to all the delegates in attendance.

The resolution proposed by the committee was unanimously adopted, and the Secretary was directed to send copies of the resolution to the various institutions named.

Mr. Levi W. Mengel, director of the Reading Public Museum, stated that any museum interested in obtaining exhibits of the asphalt industry and its by-products can obtain them from an asphalt company whose address can be secured from Mr. Mengel.

Dr. W. P. Wilson then stated, as a matter of interest to the Association, that in connection with the exhibition to be held in London in 1914 in commemoration of the century of peace between England and America the Philadelphia Commercial Museum had been offered the supervision of the manufacturing exhibits of the United States. He stated that the arrangements for this exposition have been very quietly but completely worked out and that, in his opinion, it was destined to be a marked success.

There being no other business to come before the Association, the convention of 1913 adjourned sine die at 12.45 p. m.

The members were entertained at luncheon at Memorial Hall, after which they inspected the Zoological Gardens, Fairmount Park, and the Wagner Free Institute of Science. The evening was devoted to the inspection of students' work at the School of Industrial Art.

APPENDIX

CONSTITUTION OF THE AMERICAN ASSOCIATION OF MUSEUMS

ARTICLE I

NAME

The name of this Association shall be "The American Association of Museums."

ARTICLE II

OBJECT

The object of this Association shall be to promote the welfare of Museums, to increase and diffuse knowledge of all matters relating to them, and to encourage helpful relations among Museums and those interested in them.

ARTICLE III

MEMBERSHIP

All Museums officially represented at the first meeting of this Association, held at the American Museum of Natural History in New York, on May 15, 1906; all persons taking part in the organization of this Association, or who on the above date, or prior thereto, have by letter signified their wish to become members of the Association, shall become Charter Members on payment before the next annual meeting of the Association of the fees hereinafter provided for.

The Members of the Association shall be Active, Associate, Sustaining and Honorary.

Persons actively engaged in the work of Museums may become Active Members on the payment of three dollars per annum, and may become Active Members for Life upon payment of thirty dollars at any one time.

Persons contributing one dollar per annum may become Associate Members.

Each Museum paying not less than ten dollars a year shall be a Sustaining Member of the Association, and through its chief executive officer or a properly accredited representative, shall be entitled to cast a vote on all matters coming before the Association.

Persons distinguished for eminent services, either to the cause of Museums or to this Association, may become Honorary Members. The number of Honorary Members shall be limited to fifteen. When ten Honorary Members have been elected then thereafter not more than two such members may be elected annually.

Active and Sustaining Members only shall have a right to vote, and Active Members only may hold office.

Any Museum or person proposed in writing for Active, Associate, or Sustaining Membership by a Member of the Association, and approved by the Council, upon the payment of the proper fee shall become a Member of the Association.

Any person contributing five hundred dollars or more at any one time shall become a Patron of the Association.

ARTICLE IV

OFFICERS

The officers of the Association shall be a President, two Vice-Presidents, a Secretary, and a Treasurer, and six other persons designated as Councillors, and these eleven shall constitute the Council. The President and two Councillors chosen by the Association shall retire annually, and for one year shall be ineligible for re-election to the same office. An Assistant Secretary may also be elected.

ARTICLE V

COUNCIL

The general control of the affairs of the Association, except as otherwise herein provided, shall be vested in the Council.

ARTICLE VI

ELECTION OF OFFICERS

Officers shall be elected by ballot at the annual meeting.

The Council shall have power to fill any vacancies which may occur in its membership between annual meetings.

ARTICLE VII

MEETINGS

A general meeting shall be held in each calendar year. Special meetings may be appointed by the Association or called by the Council. The time and place of the annual meeting shall be determined by the Association. In order to diffuse a knowledge of Museums and their work, the Association shall meet in a different city or town each succeeding year, unless otherwise determined by the Association.

At the annual meeting papers may be read, matters relating to Museums discussed, and any business relating to the affairs of the Association shall be transacted.

Special meetings may be called by the Council in emergencies, and only matters stated in the call shall be considered at such special meetings.

ARTICLE VIII

PUBLICATIONS

The publications of the Association shall be distributed free to all Sustaining and Active Members who have paid their dues for the year of issue. Associate Members may obtain the Proceedings in paper covers at one dollar, or in cloth binding at one dollar and twenty-five cents.

ARTICLE IX

AMENDMENTS

This Constitution may be amended by a two-thirds vote of the members present and voting at any meeting, provided that every proposed amendment shall be first considered by the Council and be reported by the Council with or without recommendation.

REPORT OF THE TREASURER OF THE AMERICAN ASSOCIATION OF
MUSEUMS, PRESENTED AT THE ANNUAL MEETING
PHILADELPHIA, JUNE 3-5, 1913

Balance on hand, May 31, 1912..... \$464.18

RECEIPTS

| | | |
|---------------------|---|------------------|
| 2 | Active memberships for year ending May 15, 1910..... | 4.00 |
| 4 | Active memberships for year ending May 15, 1911..... | 12.00 |
| 5 | Active memberships for year ending May 15, 1912..... | 15.00 |
| 1 | Active membership for year ending May 15, 1912 (part payment).. | 1.00 |
| 198 | Active memberships for year ending May 15, 1913..... | 594.15 |
| 4 | Active memberships for year ending May 15, 1914..... | 12.00 |
| 2 | Sustaining memberships for year ending May 15, 1912..... | 20.00 |
| 37 | Sustaining memberships for year ending May 15, 1913..... | 385.00 |
| 2 | Sustaining memberships for year ending May 15, 1914..... | 20.00 |
| 33 | Associate memberships for year ending May 15, 1913..... | 33.00 |
| | Sale of publications, reprints, etc..... | 49.21 |
| Total receipts..... | | <u>\$1609.54</u> |

EXPENDITURES

| | | |
|---------|---|------------------|
| 1912 | | |
| June 8 | Amy Woods, Assistant to Secretary (expenses, New York meeting)..... | \$19.90 |
| June 19 | P. M. Rea, Secretary (assistant's salary, May)..... | 30.00 |
| June 27 | American Writing Machine Co. (typewriter rent).... | 5.00 |
| July 8 | James C. Marriot (reporting proceedings)..... | 74.45 |
| July 8 | P. M. Rea, Secretary (assistant's salary, June)..... | 30.00 |
| July 17 | P. M. Rea, Secretary (petty cash)..... | 10.00 |
| July 17 | Wm. H. Hoskins Co. (1 No. 811 I. P. cover)..... | 3.75 |
| July 22 | Phila. Post Office (postage stamps)..... | 10.00 |
| Aug. 5 | P. M. Rea, Secretary (assistant's salary, July)..... | 30.00 |
| Aug. 31 | P. M. Rea, Secretary (assistant's salary, Aug.)..... | 30.00 |
| Nov. 2 | P. M. Rea, Secretary (assistant's salary, Sept.—Oct.) | 60.00 |
| Nov. 3 | P. M. Rea, Secretary (petty cash)..... | 5.13 |
| Nov. 7 | The Daggett Printing Co. (stationery)..... | 7.25 |
| Nov. 7 | Edward J. Murphy (filing case)..... | 27.50 |
| Nov. 30 | P. M. Rea, Secretary (assistant's salary, Nov.)..... | 30.00 |
| Dec. 5 | P. M. Rea, Secretary (petty cash)..... | 10.00 |
| Dec. 5 | P. M. Rea, Secretary: | |
| | Travelling expenses in re assistant..... | 5.00 |
| | Freight and cartage on <i>Proceedings</i> | 5.72 |
| | Postage on ditto..... | 19.00 |
| | Carried forward..... | <u>\$412.70</u> |
| | | <u>\$1609.54</u> |

1913

| | | |
|---|----------|-----------|
| Brought forward..... | \$412.70 | \$1609.54 |
| Jan. 2 A. A. Clinger (postage stamps for Treas.)..... | .50 | |
| Jan. 8 P. M. Rea, Secretary (assistant's salary, Dec.)..... | 30.00 | |
| Jan. 16 Williams & Wilkins Co. (1000 copies <i>Proceedings</i> and reprints)..... | 398.22 | |
| Jan. 31 P. M. Rea, Secretary (assistant's salary, Jan.)..... | 30.00 | |
| Mar. 10 P. M. Rea, Secretary (assistant's salary, Feb.)..... | 30.00 | |
| Mar. 12 A. A. Clinger (telegram from Secretary)..... | .50 | |
| Mar. 19 P. M. Rea, Secretary (petty cash)..... | 10.00 | |
| Apr. 3 P. M. Rea, Secretary (assistant's salary, March).... | 30.00 | |
| Apr. 30 The Daggett Printing Co. (400 announcements)..... | 8.50 | |
| May 2 Rena Rowell, Assistant to Secretary (salary, April)... | 30.00 | |
| May 8 A. A. Clinger (services for Treasurer)..... | 50.00 | |
| May 27 Whitehead & Hoag Co. (125 40L buttons and postage) | 7.66 | |
| May 29 P. M. Rea, Secretary (assistant's salary, May) | 30.00 | |
| (advance for assistant's expenses for Philadelphia meeting)..... | 100.00 | |
| Total expenditures..... | | 1168.08 |

Balance in treasury, June 2, 1913..... \$441.46

W. P. WILSON,
Treasurer.

Examined and found correct:

A. R. CROOK

CHAS. W. JOHNSON

J. E. TALMAGE

Auditing Committee.

MEMBERS OF THE AMERICAN ASSOCIATION OF MUSEUMS

SUSTAINING MEMBERS

The asterisk (*) denotes a Charter Member.

Academy of Natural Sciences of Philadelphia, Philadelphia, Pa.

*American Museum of Natural History, 77th St. and Central Park West, New York City.

*Art Association of Indianapolis (John Herron Art Institute), Indianapolis, Ind.

*The Art Institute of Chicago, Chicago, Ill.

Boston Society of Natural History, Boston, Mass.

*Brooklyn Institute Museum, Eastern Parkway, Brooklyn, N. Y.

Calgary Museum, Calgary, Alberta, Canada.

*Carnegie Museum, Department of the Carnegie Institute, Pittsburgh, Pa.

*The Charleston Museum, Charleston, S. C.

*The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.

Cincinnati Museum Association, Cincinnati, Ohio.

City Art Museum, Forest Park, St. Louis, Mo.

Colorado Museum of Natural History, Denver, Col.

*The Corcoran Gallery of Art, Washington, D. C.

Department of Archaeology, Phillips Academy, Andover, Mass.

*Deseret Museum, Salt Lake City, Utah.

The Essex Institute, Salem, Mass.

*The Fairbanks Museum of Natural Science, St. Johnsbury, Vt.

*Field Museum of Natural History, Chicago, Ill.

Geological Survey of Canada, Ottawa, Canada.

Germanic Museum, Harvard University, Cambridge, Mass.

Joseph Moore Museum, Earlham College, Earlham, Ind.

Mattatuck Historical Society, Waterbury, Conn.

*Metropolitan Museum of Art, New York City.

Museo de Historia Nacional, Montevideo, Uruguay.

Museo Nacional de Bogota, Bogota, Colombia.

Museum of the College of Liberal Arts, Northwestern University, Evanston, Ill.

*Museum of Fine Arts, Boston, Mass.

Museum of the Grand Lodge of F. and A. M. of Pennsylvania, Masonic Temple, Philadelphia, Pa.

*New York Botanical Garden, Bronx Park, New York City.

*New York State Museum, Albany, N. Y.

Peabody Museum, Salem, Mass.

*Pennsylvania Museum and School of Industrial Art, Memorial Hall, Fairmount Park, Philadelphia, Pa.

Pennsylvania State Museum, Harrisburg, Pa.

The Philadelphia Museums, 34th St., below Spruce, Philadelphia, Pa.

*Public Museum of the City of Milwaukee, Milwaukee, Wis.

Springfield Art Museum, Springfield, Mass.

*University Museum, Department of Archaeology, University of Pennsylvania, Philadelphia, Pa.

Wadsworth Athenæum, Hartford, Conn.

*Washington State Art Association, Seattle, Wash.

Worcester Art Museum, Worcester, Mass.

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